Access DB# 92116

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carrie S. Thompson Examiner # : 79244 Date: 4/23/03
Art Unit: 1774 Phone Number 30 54488 Serial Number: _____
Mail Box and Bldg/Room Location: CP3/11/B/28 Results Format Preferred (circle): PAPER DISK E-MAIL

If mor than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Soluble Tetrahedral compounds for use in electroluminescent devices

Inventors (please provide full names): Guillermo Bazan; Shujun Wang; Matthew Rotzsim

Earliest Priority Filing Date: 05/02/2000 US 20030055278A1

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please do a search on claims 1-14.

Thank you!

Please See attached!

Ones marked might be a start. Many of claims such as 1-3 et were broad enough so they basically had to be text-searche even though the claims were product claims drawn to the compounc themselves.

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STAFF USE ONLY

Searcher: Ed
Searcher Phone #: _____
Searcher Location: _____
Date Searcher Picked Up: _____
Date Completed: 4-25-03
Searcher Prep & Review Time: 20
Clerical Prep Time: _____
Online Time: 145

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____ (9)
Bibliographic _____ (and)
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN $381.71
Dialog (subsets)
Questel/Orbit _____
DrLink _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

PTO-1590 (8-01)

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FILE 'REGISTRY' ENTERED AT 12:13:17 ON 25 APR 2003
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=> display history full l1-


     FILE 'HCAPLUS' ENTERED AT 10:15:39 ON 25 APR 2003
L1          1083 SEA BAZAN ?/AU
L2        252694 SEA WANG ?/AU
L3         28656 SEA ROBINSON ?/AU
L4             8 SEA L1 AND L2 AND L3
L5         61672 SEA TETRAHED?
L6             4 SEA L4 AND L5
L7             4 SEA L4 NOT L6
                 SEL L6 1-4 RN
                 SEL L7 1-4 RN

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L9            53 SEA (288105-05-5/BI OR 100-42-5/BI OR 109-65-9/BI OR

L10           40 SEA (L8 OR L9) AND 39<C
L11           33 SEA (L8 OR L9) AND 49<C
L12           28 SEA (L8 OR L9) AND 59<C
L13           24 SEA (L8 OR L9) AND 69<C
L14           17 SEA (L8 OR L9) AND 79<C

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L16       178978 SEA (ELECTRON# OR E OR HOLE# OR HOLING#)(2A)(TRANSPORT?
                 OR TRANSFER? OR MIGRAT? OR TRANSMIT? OR TRANSMISSION? OR
                 TRANSMIGRAT? OR MOVE# OR MOVING# OR MOVEMENT?)

L17        81611 SEA (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO
                 OR ORG#)(2A)LUM!N? OR LIGHT?(2A)(EMIT? OR EMISSION?) OR
                 EL OR E(W)L OR L(W)E(W)D)/BI,AB OR LED/IT
L18        53591 SEA CHROMOPHOR? OR CHROMOGEN? OR ELECTROCHROM?
L19           10 SEA L14
L20           10 SEA L13
L21           10 SEA L12
L22           10 SEA L11
L23           10 SEA L10
L24        91599 SEA L8 OR L9

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L25           91 SEA (L8 OR L9) AND 9<C
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L34        2399 SEA L30 AND ((L15 OR L16 OR L17 OR L18))
L35           9 SEA L33 AND L5
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L42        1244 SEA L34 AND L16
L43        1006 SEA L34 AND L17
L44         378 SEA L34 AND L18
L45           8 SEA (L37 OR L38 OR L40) AND L39
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L48          41 SEA L41 AND L42
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L50          69 SEA L41 AND L44
L51         383 SEA L42 AND L43
L52          26 SEA L42 AND L44
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L55             1 SEA TETRAPHENYLMETHANE/CN
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L56               STR 630-76-2

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L58               STR

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L65             1 SEA CUBANE/CN
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L66              STR 630-76-2

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L86           339 SEA L79 AND L18
L87             9 SEA L82 AND ((L83 OR L84 OR L85 OR L86))
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L89            56 SEA L86 AND L84
L90            67 SEA L86 AND L85
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L96              31 SEA L80 NOT L95
L97               3 SEA L4 NOT (L95 OR L96)
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=> d l77 que stat
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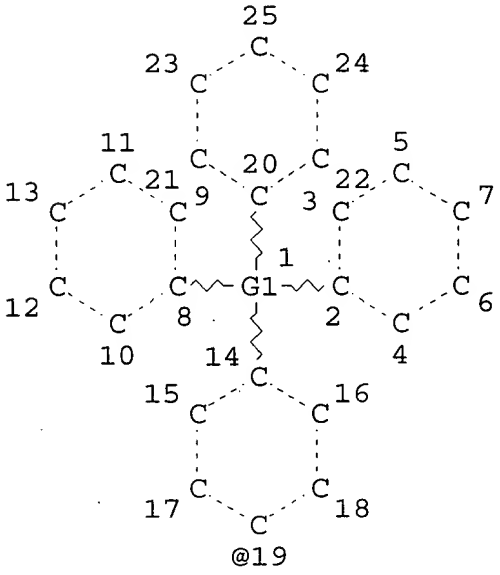

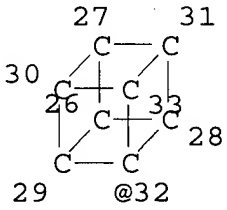

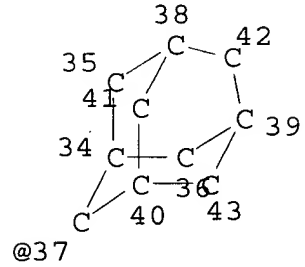

G2 46

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DEFAULT ECLEVEL IS LIMITED

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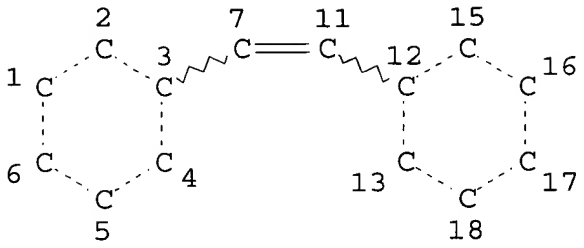

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STEREO ATTRIBUTES: NONE
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L77 158 SEA FILE=REGISTRY SUB=L75 SSS FUL L66 AND L73 AND L60 AND L69

100.0% PROCESSED 30653 ITERATIONS 158 ANSWERS
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=> d l95 1-28 cbib abs hitstr hitind

L95 ANSWER 1 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2002:932237 Document No. 138:188189 Synthesis and **optical** and **electrochemical** properties of novel copolymers containing alternating 2,3-divinylquinoxaline and **hole-transporting** units. Wu, Tzi-Yi; Chen, Yun (Department of Chemical Engineering, National Cheng Kung University, Tainan, 701, Taiwan). Journal of Polymer Science, Part A: Polymer Chemistry, 40(24), 4570-4580 (English) 2002. CODEN: JPACEC. ISSN: 0887-624X. Publisher: John Wiley & Sons, Inc..
AB For the enhancement of charge affinity, electron-affinitive 2,3-divinylquinoxaline and a series of **hole-transporting chromophores** (iminodibenzyl, phenothiazine, dihexyloxybenzene, and didodecyloxydistyrylbenzene)

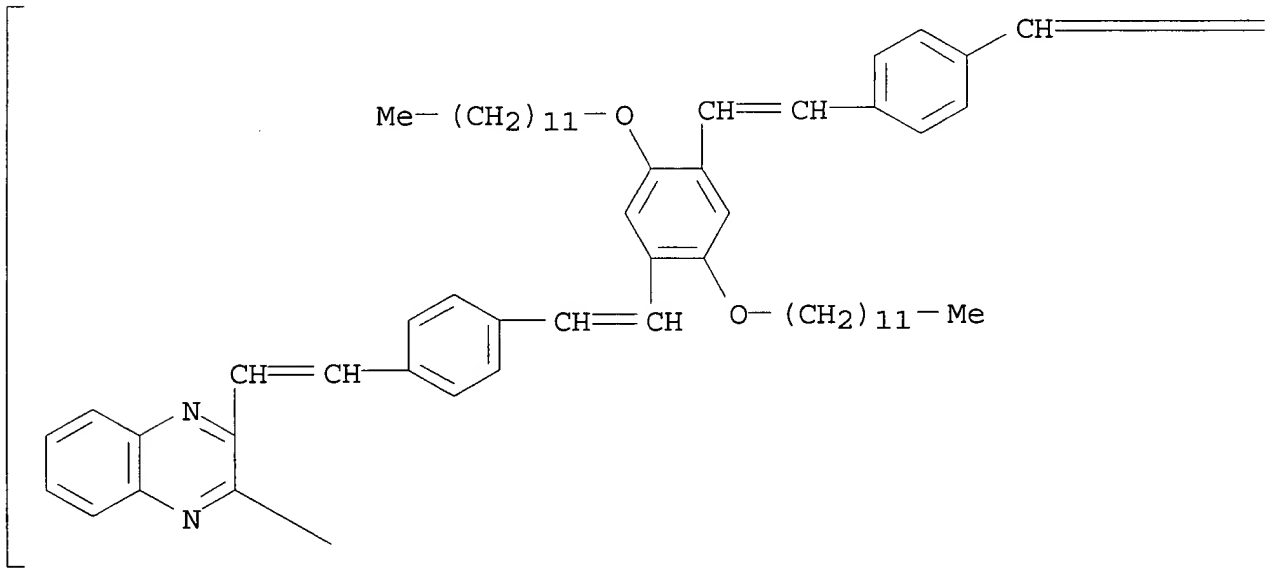
were incorporated alternately into the polymeric main chain. The resulting copolymers (P1-P4) were basically amorphous materials and were thermally stable below 300.degree.. The electronic structures, photoluminescence, and electrochem. properties of these copolymers were mainly detd. by the electron-donating **chromophores** in the backbone. They showed significant pos. solvatochromism in formic acid. An electrochem. study revealed that they exhibited lower band gaps (<2.3 eV) due to alternating donor and acceptor conjugated units (push-pull structure). Single-layer **light -emitting** diodes of aluminum, P1-P4, and indium tin oxide glass were fabricated, and preliminary **electroluminescence** spectra showed that P1, P3, and P4 were orange-emitting materials.

IT **497961-49-6P**
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

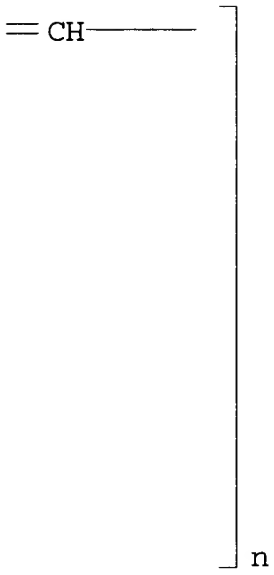
RN 497961-49-6 HCAPLUS

CN Poly[2,3-quinoxalinediyl-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl[2,5-bis(dodecyloxy)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl] (9CI) (CA INDEX NAME)

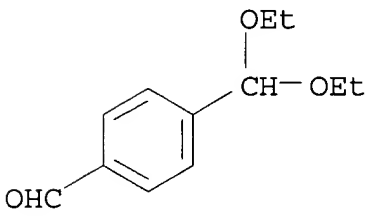
PAGE 1-A



PAGE 1-B



IT **81172-89-6**, Terephthalaldehyde mono(diethyl acetal)
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)
RN 81172-89-6 HCAPLUS
CN Benzaldehyde, 4-(diethoxymethyl)- (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 37, 65, 73
ST polyarylenealkenylene divinylquinoxaline **hole transporting** unit **electroluminescence** band gap MO; iminodibenzyl divinylquinoxaline polyarylenealkenylene **electroluminescence** band gap MO; didodecyloxydistyrylbenzene divinylquinoxaline polyarylenealkenylene **electroluminescence** band gap MO; dihexyloxybenzene divinylquinoxaline polyarylenealkenylene **electroluminescence** band gap MO; phenothiazine divinylquinoxaline polyarylenealkenylene **electroluminescence** band gap MO

IT **Electroluminescent** devices
Luminescence, **electroluminescence**
(electrochem. properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units used for LEDs)

IT Band gap
(optical; prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT Solvatochromism
(pos.; prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT Absorption spectra
Electron affinity
HOMO (molecular orbital)
Ionization potential
LUMO (molecular orbital)
Luminescence
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units).

IT Poly(arylenealkenylenes)
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT Monomers
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
(electrochem. properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units used for LEDs)

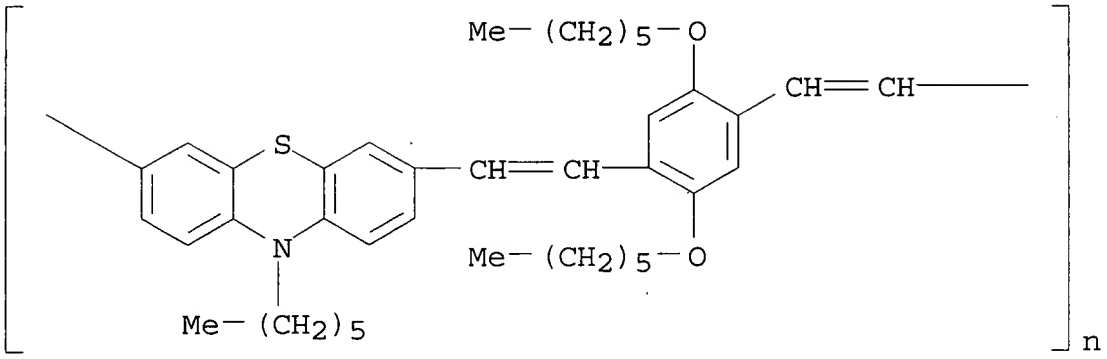
IT 99565-79-4P 151903-52-5P 497961-41-8P
(monomer; prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT 497961-42-9P 497961-43-0P 497961-44-1P 497961-45-2P
497961-46-3P 497961-47-4P 497961-48-5P **497961-49-6P**
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

IT 95-54-5, 1,2-Phenylenediamine, reactions 122-52-1, Triethylphosphite 6305-43-7, 1,4-Dibromo-2,3-butanedione

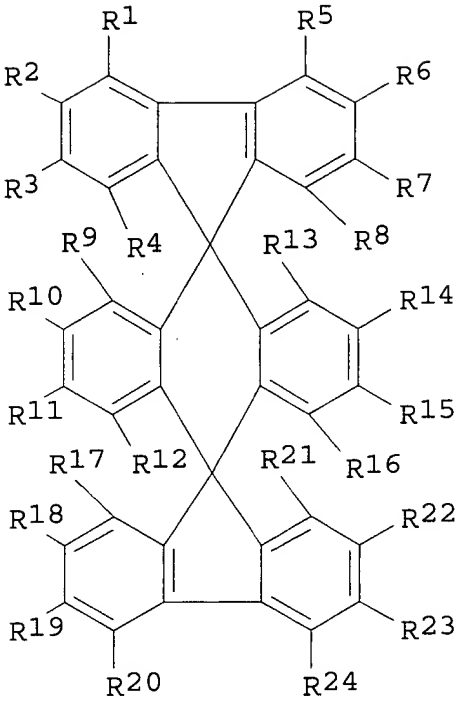
81172-89-6, Terephthalaldehyde mono(diethyl acetal)
122996-59-2 153282-57-6
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)
IT 3138-86-1P 158982-82-2P 158982-83-3P 182500-35-2P
(prepn. and **optical** and **electrochem.** properties of copolymers contg. alternating electron-affinitive divinylquinoxaline and **hole-transporting** units)

L95 ANSWER 2 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2002:932224 Document No. 138:170601 Synthesis and characterization of novel luminescent polymers with alternate phenothiazine and divinylbenzene units. Wu, Tzi-Yi; Chen, Yun (Department of Chemical Engineering, National Cheng Kung University, Tainan, 701, Taiwan). Journal of Polymer Science, Part A: Polymer Chemistry, 40(24), 4452-4462 (English) 2002. CODEN: JPACEC. ISSN: 0887-624X. Publisher: John Wiley & Sons, Inc..
AB Novel luminescent polymers (P1 and P2) carrying alternate phenothiazine and divinylbenzene units were synthesized via the Wittig reaction. Absorption, fluorescence, and cyclic voltammetric methods were applied to investigate their **optical** and **electrochem.** properties. The photoluminescence (PL) maxima of P1 and P2 were 559 and 568 nm, resp. Compared with reported **hole-transport** groups such as carbazole, alkyldiphenylamine, triphenylamine, and iminodibenzyl **chromophores**, phenothiazine moieties in P1 and P2 bathochromically shift the PL maxima and narrow the band gaps. Their relative PL efficiencies were about 0.5 and 0.3 in soln. and in the film state, resp. Moreover, highest occupied MOs of P1 (4.78 eV) and P2 (4.74 eV) were even higher than the work function of ITO electrode (4.8 eV). The threshold elec. fields of the Al/P1 (or P2)/ITO device were about 1.52-1.63 .cntdot. 106 V/cm, which were smaller than 1.73 .cntdot. 106 V/cm of P3, consisting of alternate iminodibenzyl and divinylbenzene units.
IT **497838-91-2P**
(synthesis and characterization of novel luminescent polymers with alternate phenothiazine and divinylbenzene units)
RN 497838-91-2 HCAPLUS
CN Poly[(10-hexyl-10H-phenothiazine-3,7-diyl)-1,2-ethenediyl[2,5-bis(hexyloxy)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 76
ST phenothiazine contg polyarylenevinylene synthesis fluorescence **electroluminescence** band structure
IT Band gap
Band structure
Luminescence
Luminescence, **electroluminescence**
Thermal stability
(of novel luminescent polymers with alternate phenothiazine and divinylbenzene units)
IT **Electroluminescent** devices
(synthesis and characterization of novel luminescent polymers with alternate phenothiazine and divinylbenzene units for)
IT 497838-88-7P 497838-89-8P 497838-90-1P **497838-91-2P**
(synthesis and characterization of novel luminescent polymers with alternate phenothiazine and divinylbenzene units)

L95 ANSWER 3 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2002:849756 Document No. 137:360139 Double-spiro organic compounds and **electroluminescent** devices. Kim, Kong-Kyeum; Son, Se-Hwan; Yoon, Seok-Hee; Bae, Jae-Soon; Lee, Youn-Gu; Im, Sung-Gap; Kim, Ji-Eun; Lee, Jae-Chol (LG Chem, Ltd., S. Korea). PCT Int. Appl. WO 2002088274 A1 20021107, 117 pp. DESIGNATED STATES: W: CN, JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-KR458 20020318. PRIORITY: KR 2001-23039 20010427; KR 2001-23038 20010427.
GI



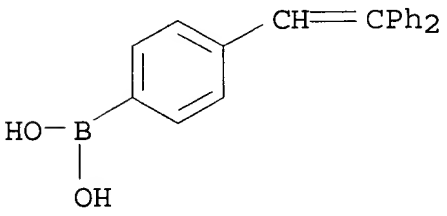
I

AB Double-spiro org. compds. are claimed which are described by the general formula I (R1-24 = independently selected substituents not all of which are H). **Light-emitting**, **hole-transporting**, and **electron-transporting** materials comprising the compds. are also described. **Electroluminescent** materials comprising the compds, including deposited films, methods for depositing the materials, and org. **electroluminescent** devices employing the materials, and method for fabricating the devices, are also described.

IT **288105-04-4**
(double-spiro org. compds. and **electroluminescent** devices using them)

RN 288105-04-4 HCAPLUS

CN Boronic acid, [4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS C07C013-72
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 24, 76
ST double spiro org compd **electroluminescent** device
IT Semiconductor device fabrication
(double-spiro org. compds. and **electroluminescent** devices using them)
IT Spiro compounds
(double-spiro org. compds. and **electroluminescent** devices using them)
IT Luminescent substances
(**electroluminescent**; double-spiro org. compds. and **electroluminescent** devices using them)
IT **Electroluminescent** devices
(org.; double-spiro org. compds. and **electroluminescent** devices using them)
IT 159-56-8 474687-62-2D, derivs. 474687-68-8D, derivs. 474687-72-4 474687-74-6D, derivs. 474687-77-9D, derivs. 474687-79-1D, derivs. 474687-89-3 474687-90-6 474687-93-9 474687-95-1 474687-97-3 474688-01-2 474688-04-5 474688-09-0 474688-10-3 474688-11-4 474688-12-5 474688-13-6 474688-14-7 474688-15-8 474688-16-9 474688-17-0 474688-18-1 474688-19-2 474688-20-5 474688-21-6 474688-22-7 474688-23-8 474688-25-0 474688-26-1 474688-27-2 474688-28-3 474688-29-4 474688-30-7 474688-31-8 474688-32-9 474688-33-0 474688-34-1 474688-35-2 474688-36-3 474688-37-4 474688-38-5 474688-39-6 474688-40-9 474688-41-0 474688-42-1 474688-43-2 474688-44-3 474688-45-4 474688-46-5 474688-47-6 474688-48-7 474688-50-1 474688-52-3 474688-54-5 474688-59-0 474688-61-4 474688-62-5 474688-63-6 474688-64-7 474688-65-8 474688-66-9 474688-67-0 474688-68-1 474688-69-2
(double-spiro org. compds. and **electroluminescent** devices using them)
IT 474687-62-2P 474687-68-8P 474687-70-2P 474687-74-6P 474687-77-9P 474687-79-1P 474687-82-6P 474687-85-9P 474687-87-1P 474687-88-2P
(double-spiro org. compds. and **electroluminescent** devices using them)
IT 474687-91-7P 474687-92-8P 474687-94-0P 474687-96-2P 474687-98-4P 474687-99-5P 474688-00-1P 474688-02-3P 474688-03-4P 474688-05-6P 474688-06-7P 474688-07-8P 474688-08-9P 474688-24-9P 474688-49-8P 474688-51-2P 474688-53-4P 474688-55-6P 474688-56-7P 474688-57-8P 474688-58-9P 474688-60-3P
(double-spiro org. compds. and **electroluminescent** devices using them)
IT 84-54-8, 2-Methylanthraquinone 86-74-8, Carbazole 90-30-2 98-80-6, Phenylboronic acid 121-43-7, Trimethylborate 121-44-8, Triethylamine, reactions 122-39-4, Diphenylamine, reactions

128-08-5, N-Bromosuccinimide 128-37-0, 2,6-Di-tert-butyl-4-methylphenol, reactions 504-63-2, 1,3-Propanediol 523-27-3, 9,10-Dibromoanthracene 530-48-3, 1,1-Diphenylethylene 531-91-9, Diphenylbenzidine 572-83-8, 2-Bromoanthraquinone 580-13-2, 2-Bromonaphthalene 626-39-1, 1,3,5-Tribromobenzene 633-70-5, 2,6-Dibromoanthraquinone 1564-64-3, 9-Bromoanthracene 2052-07-5, 2-Bromobiphenyl 7726-95-6, Bromine, reactions 17088-21-0, 1-Vinylpyrene 17919-34-5 23674-20-6, 9-Bromo-10-phenylanthracene 25069-74-3 28611-39-4, 4-(Dimethylamino)phenylboronic acid 201731-79-5, 2-Bromo-9,10-diphenylanthracene 201802-67-7 **288105-04-4** 334658-75-2 400607-16-1 474688-72-7 474688-73-8 474688-74-9 474688-77-2 474688-80-7 474688-81-8
(double-spiro org. compds. and **electroluminescent** devices using them)

IT 6363-86-6P 13249-58-6P 22072-53-3P 85637-31-6P 103068-20-8P 474688-70-5P 474688-71-6P 474688-75-0P 474688-76-1P 474688-78-3P 474688-79-4P
(double-spiro org. compds. and **electroluminescent** devices using them)

L95 ANSWER 4 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2002:761994 Document No. 138:122338 Single molecule spectroscopy of **tetrahedral** oligophenylenevinylene molecules. Summers, Melissa A.; Robinson, Matthew R.; Bazan, Guillermo C.; Buratto, Steven K. (Department of Chemistry and Biochemistry, University of California, Santa Barbara, CA, 93106-9510, USA). Chemical Physics Letters, 364(5,6), 542-549 (English) 2002. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier Science B.V..

AB We probe the fluorescence from single mols. of a new class of **tetrahedral** oligo(phenylenevinylene) (OPV) mols. Our results show that the **tetrahedral** mols. contain multiple **chromophores** with limited inter-arm coupling, but significant mol. motion about the central carbon results in fluctuations in the polarizability axis of the mol. Loss in luminescence intensity is also obsd. during the fluctuations which is attributed to inter-arm coupling occurring when adjacent arms come close together. These fluctuations occur on the timescale of 100 ms to 10 s and are shown to be absent in the arm' mols. alone.

IT **372109-52-9 404935-53-1**
(single mol. spectroscopy of **tetrahedral** oligophenylenevinylene mols.)

RN 372109-52-9 HCAPLUS

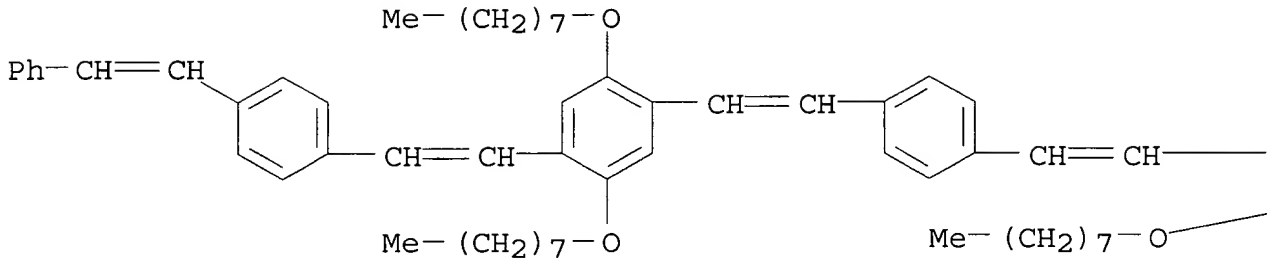
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-phenylethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

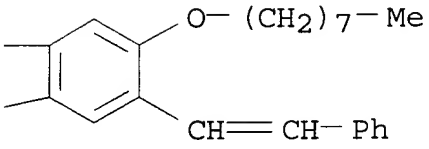
RN 404935-53-1 HCAPLUS

CN Benzene, 1-[2-[4-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)-4-[2-[4-(2-phenylethenyl)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 73

IT Fluorescence
(from single mols.; single mol. spectroscopy of **tetrahedral** oligophenylenevinylene mols.)

IT Polarization
(laser; single mol. spectroscopy of **tetrahedral** oligophenylenevinylene mols.)

IT Fluorescence microscopy
Single molecule detection
(single mol. spectroscopy of **tetrahedral** oligophenylenevinylene mols.)

IT **372109-52-9 404935-53-1**
(single mol. spectroscopy of **tetrahedral** oligophenylenevinylene mols.)

L95 ANSWER 5 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2002:197575 Document No. 137:6694 Tris- and tetrakis-[oligo(phenylenevinylene)]silanes: synthesis and luminescence behaviour. Detert, Heiner; Sugiono, Erli (Institute for Organic Chemistry, Johannes Gutenberg-Universitat Mainz, Mainz, 55099, Germany). Synthetic Metals, 127(1-3), 237-239 (English) 2002. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..

AB The connection of 3 or 4 monodisperse oligo(phenylenevinylene)s to a central silicon atom is performed via Wittig-Horner reactions. The

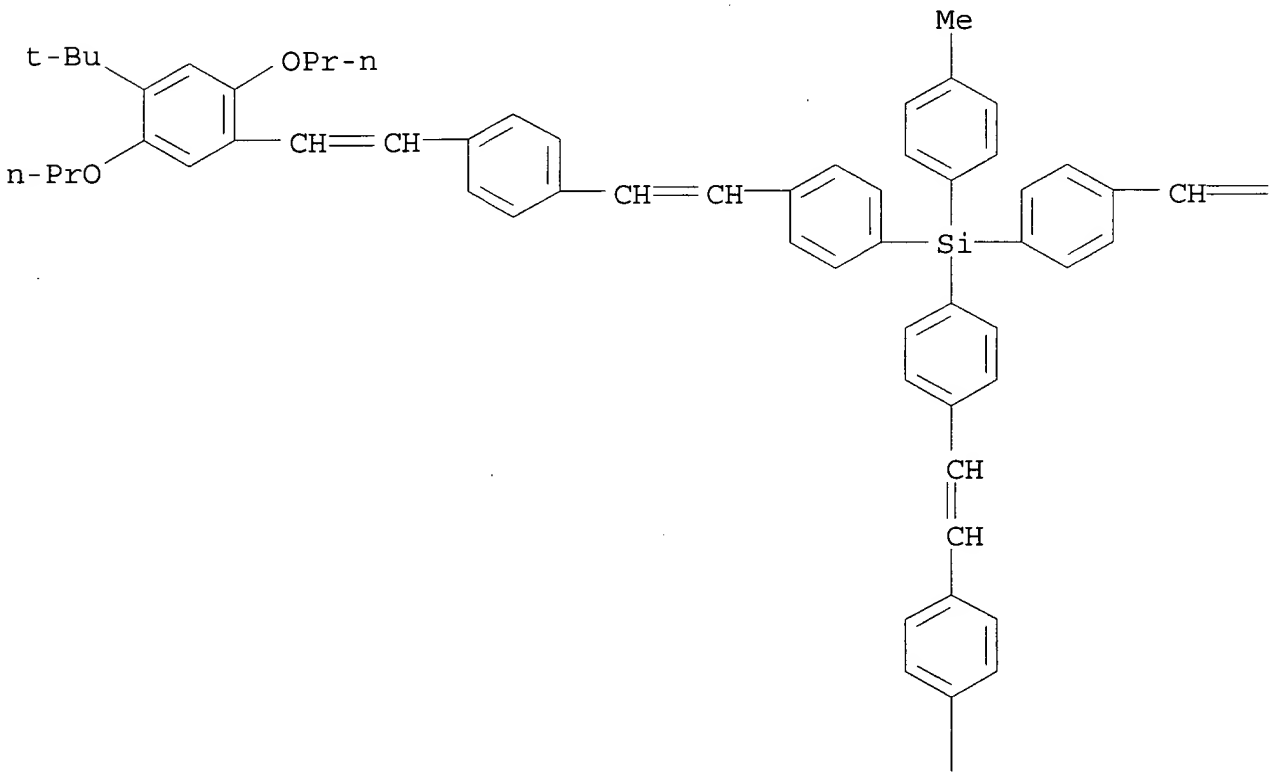
terminal rings are substituted with alkoxy side chains. Depending on the ratio of the lengths of the rigid conjugated units and the flexible side chains, transparent films can be obtained from several of these trigonal-pyramidal or **tetrahedral** mols. An intense fluorescence in the blue-green region is emitted by mols. of either shape. These compds. are interesting as active materials for **electro-optical** applications due to their intense fluorescence and improved film forming capability.

IT **433729-28-3P 433729-29-4P 433729-30-7P**
433729-31-8P 433729-32-9P 433729-33-0P
(prepn. and luminescence of silanes tris- and tetrakis-substituted with oligo(phenylenevinylene))

RN 433729-28-3 HCAPLUS

CN Silane, tris[4-[2-[4-[2-[4-(1,1-dimethylethyl)-2,5-dipropoxyphenyl]ethenyl]phenyl]ethenyl]phenyl](4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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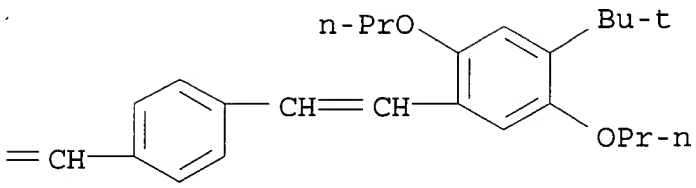

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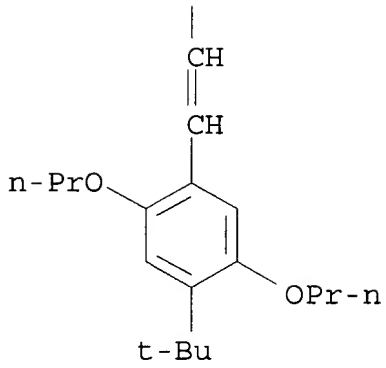
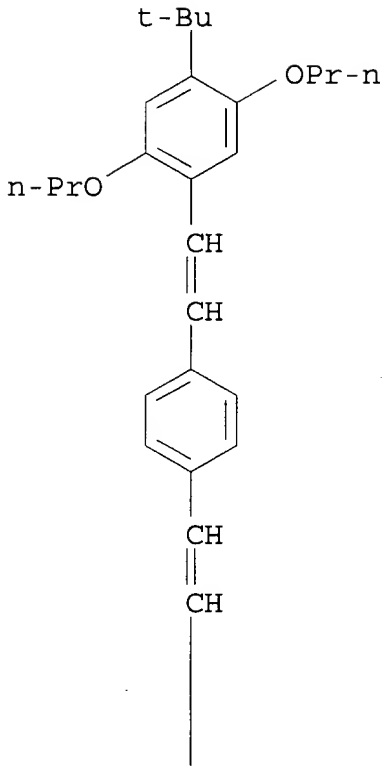
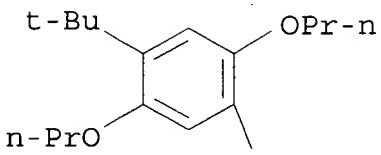


RN 433729-29-4 HCAPLUS
CN Silane, tetrakis[4-[2-[4-[2-[4-(1,1-dimethylethyl)-2,5-dipropoxyphenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A





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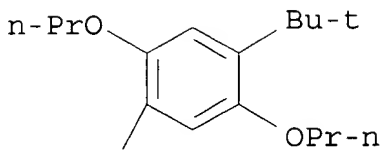

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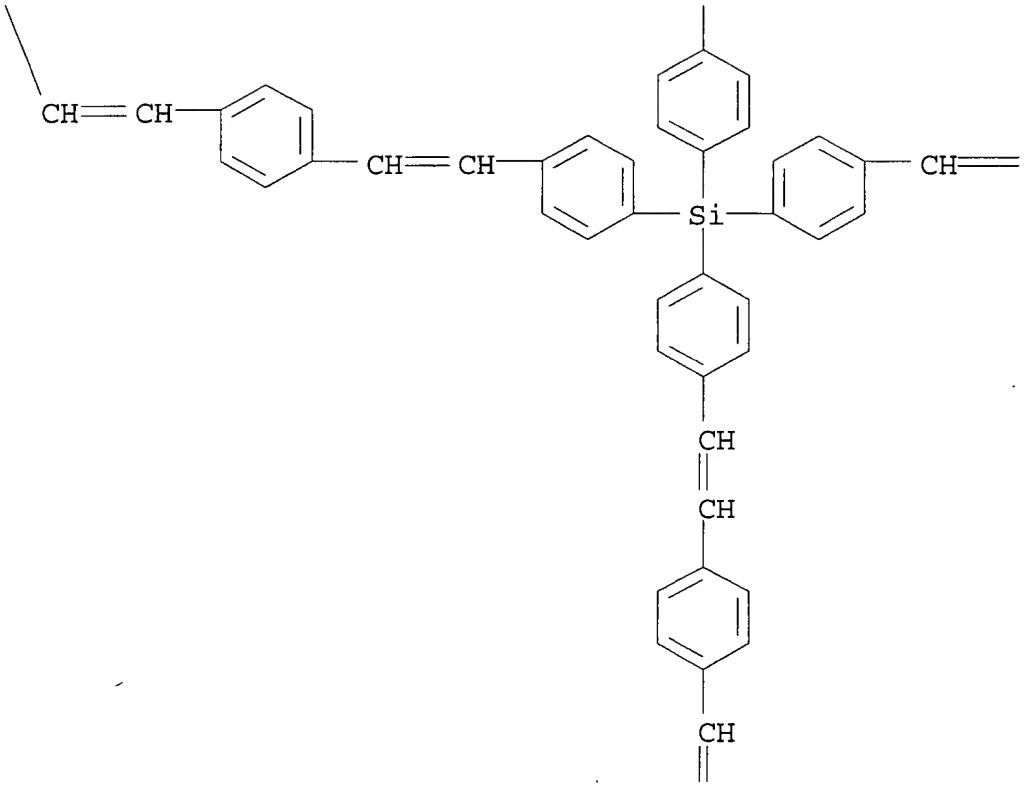

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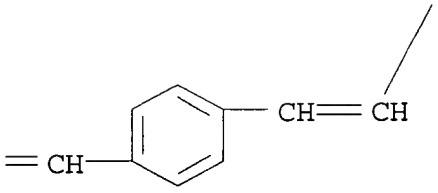

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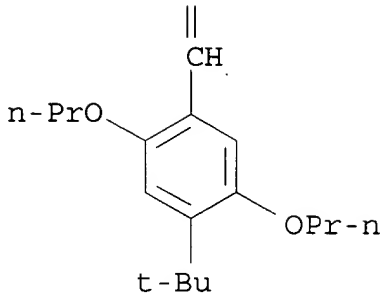
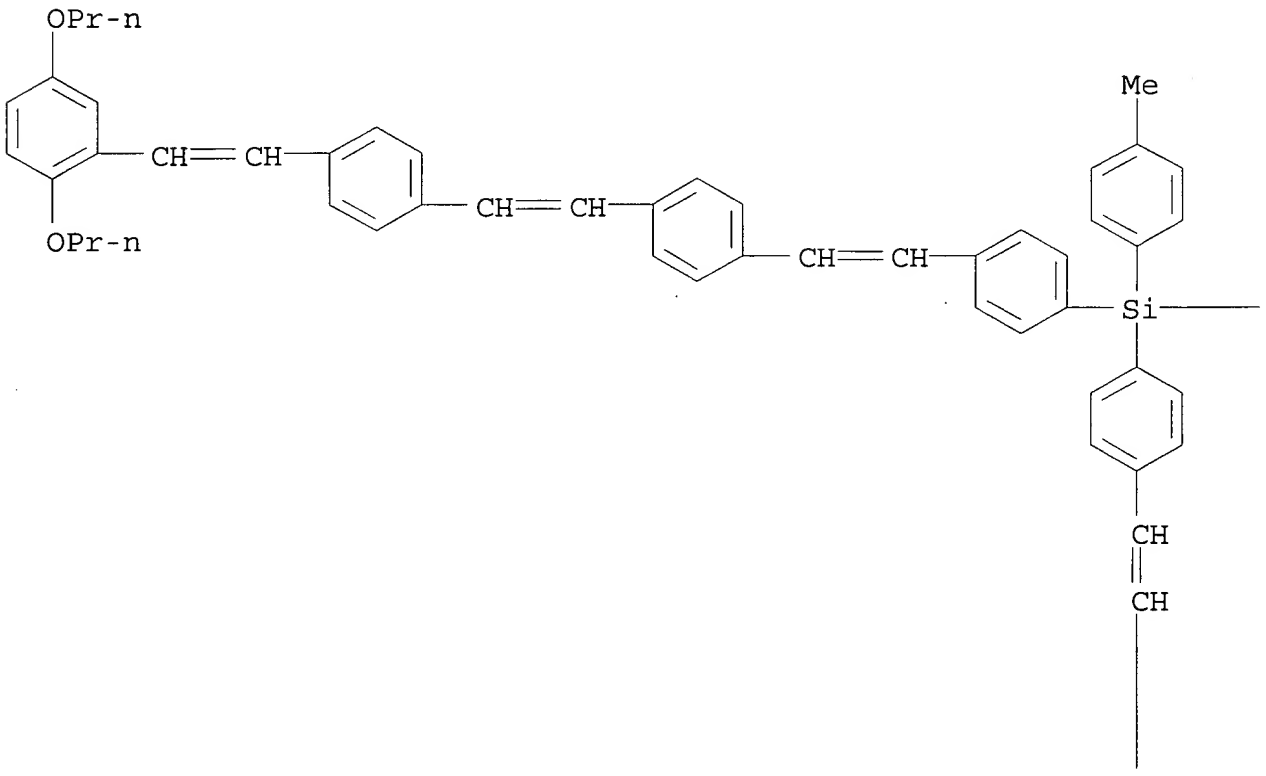


RN 433729-30-7 HCAPLUS
CN Silane, tris[4-[2-[4-[2-[4-[2-(2,5-dipropoxyphenyl)ethenyl]phenyl]ethenyl]phenyl]ethenyl]phenyl](4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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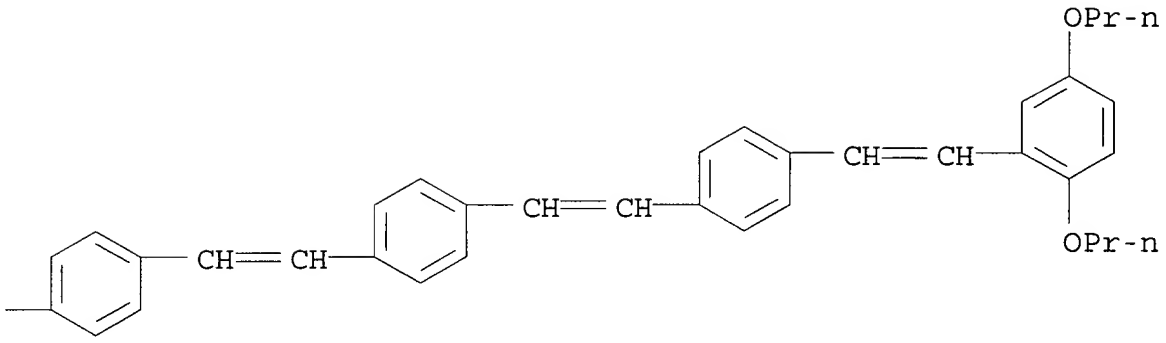

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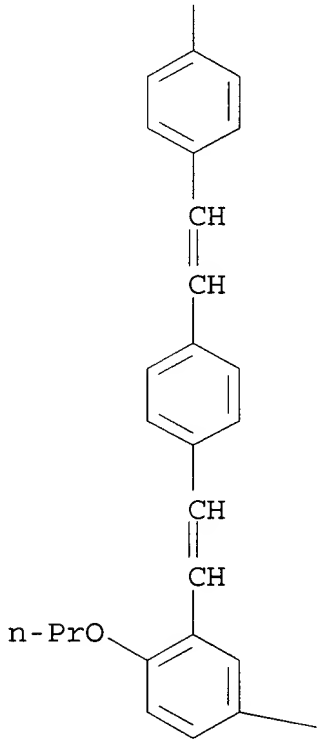

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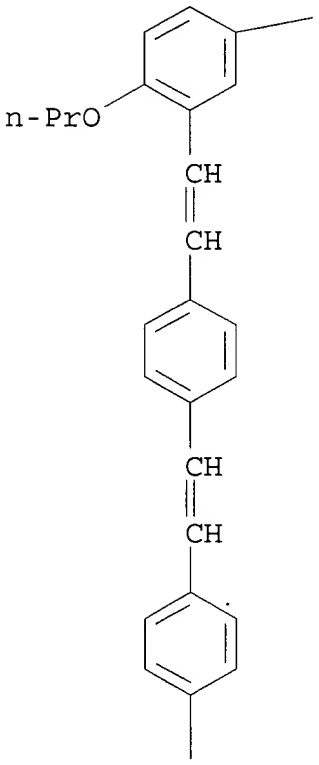
OPr-n

RN 433729-31-8 HCAPLUS
CN Silane, tetrakis[4-[2-[4-[2-[4-[2-(2,5-dipropoxyphenyl)ethenyl]phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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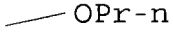

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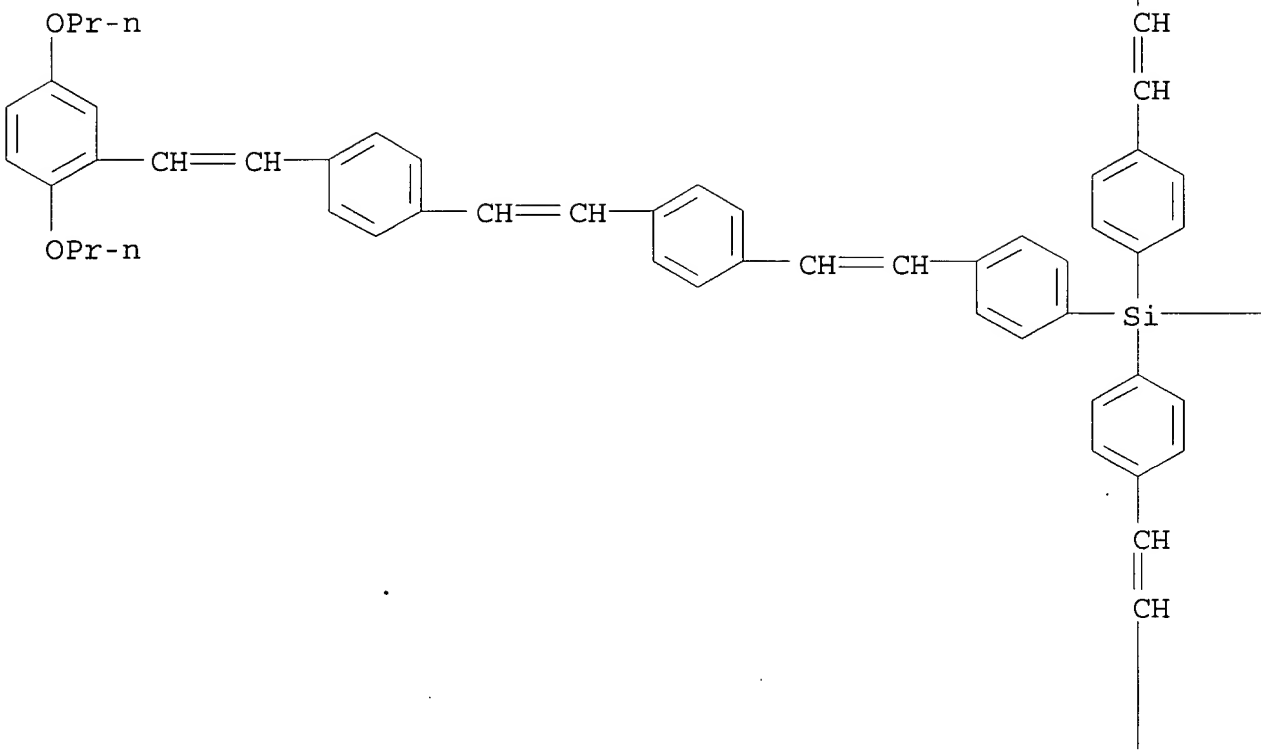

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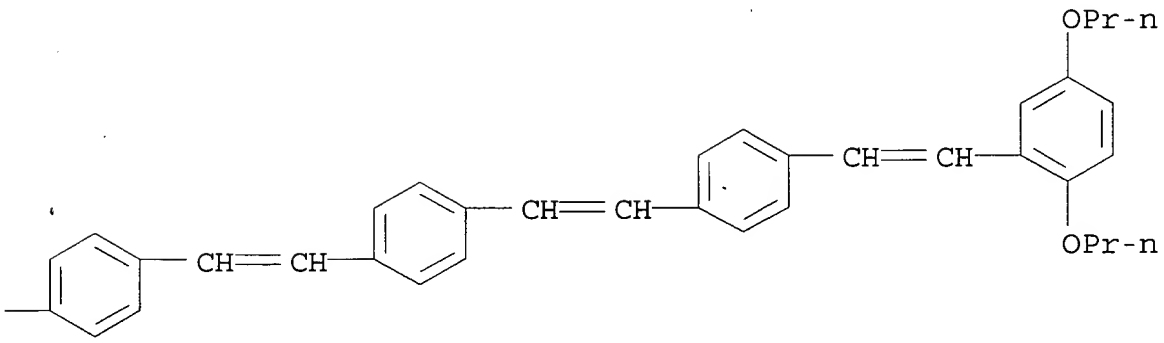

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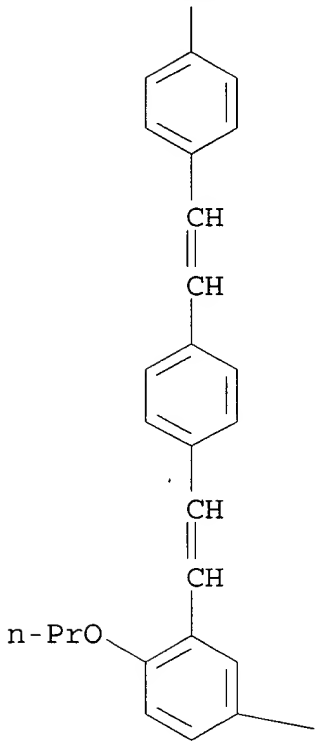


PAGE 3-B

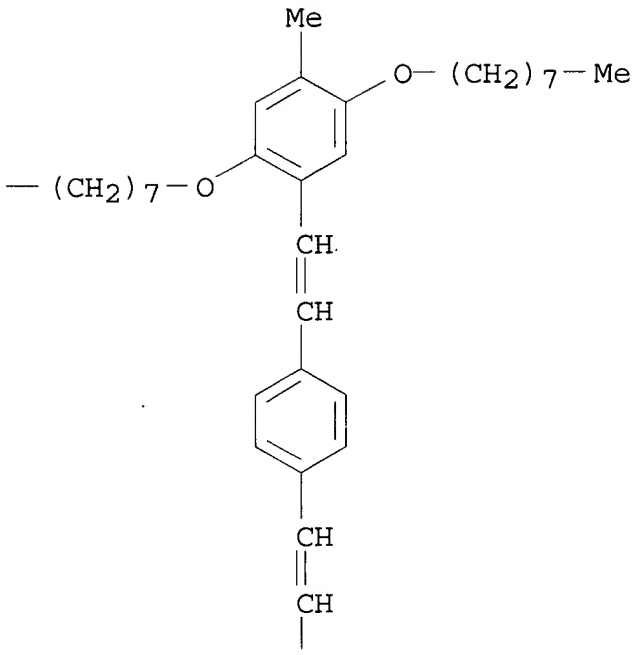
—OPr-n

RN 433729-32-9 HCAPLUS
CN Silane, tetrakis[4-[2-[4-[2-[4-[2-[4-methyl-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]phenyl]-(9CI) (CA INDEX NAME)

PAGE 1-A

Me—

PAGE 1-B



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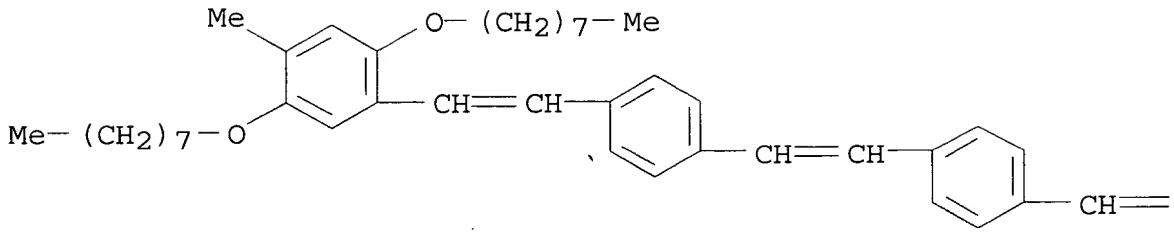

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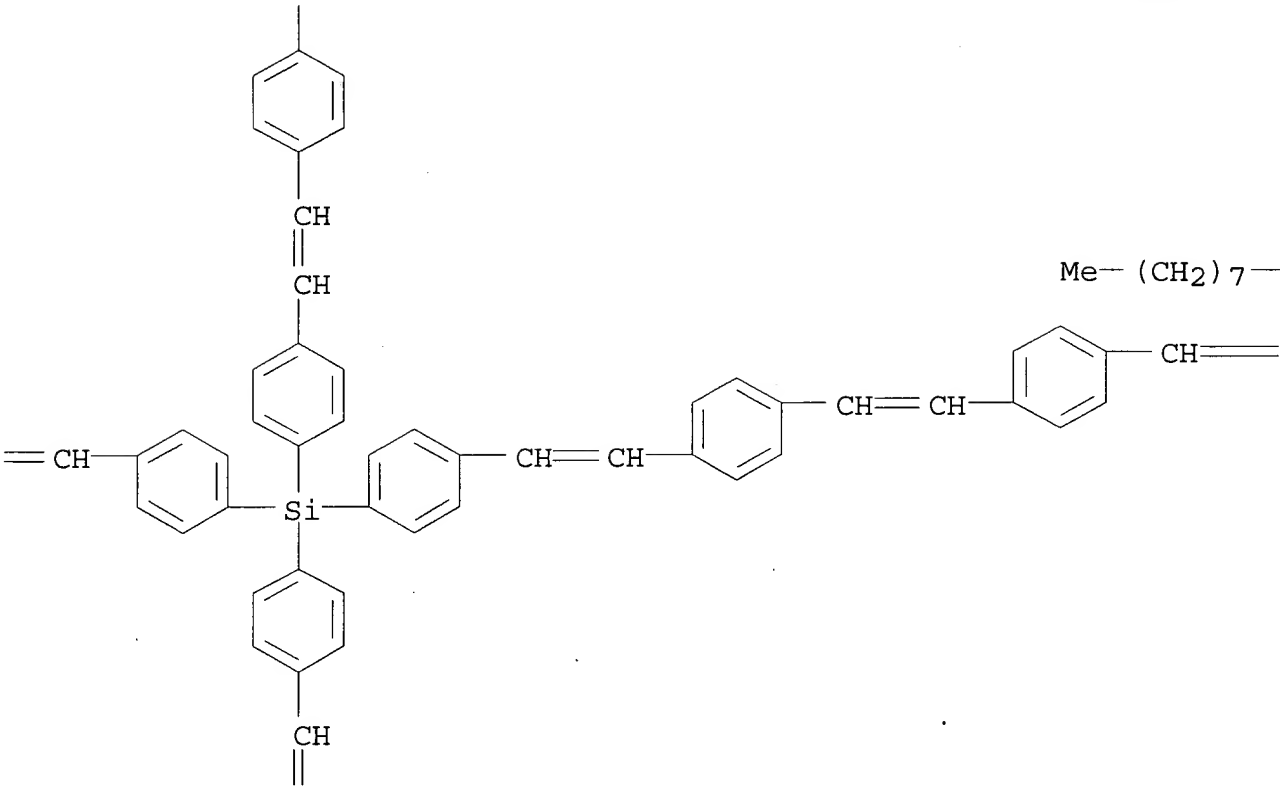

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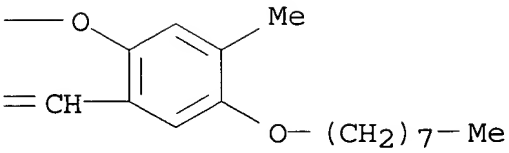

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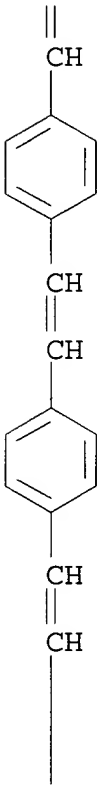
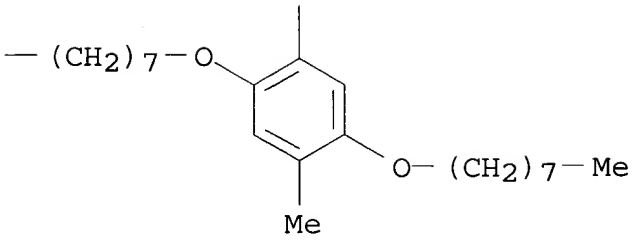


PAGE 4-A

Me—

PAGE 4-B



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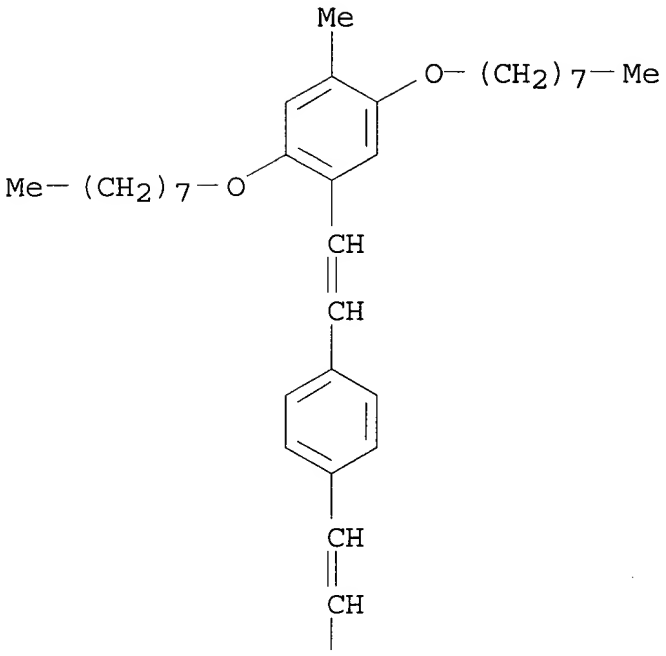
CN Silane, tetrakis[4-[2-[4-[2-[4-[2-[4-[2-[4-methyl-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]phenyl]eth

enyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-B



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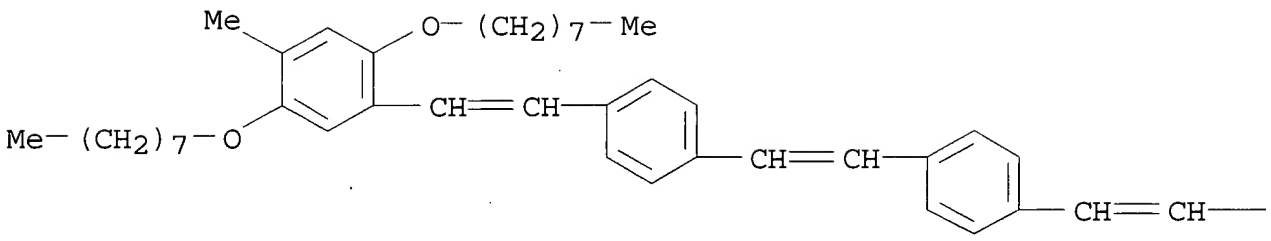

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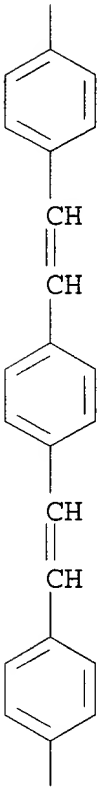

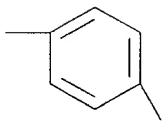

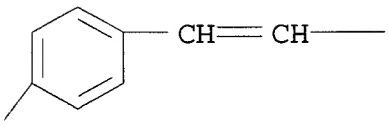

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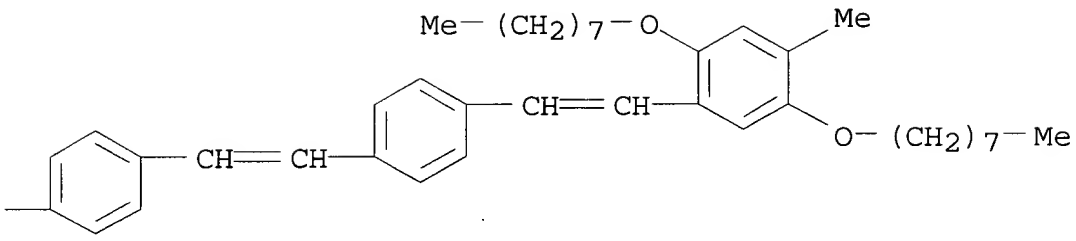

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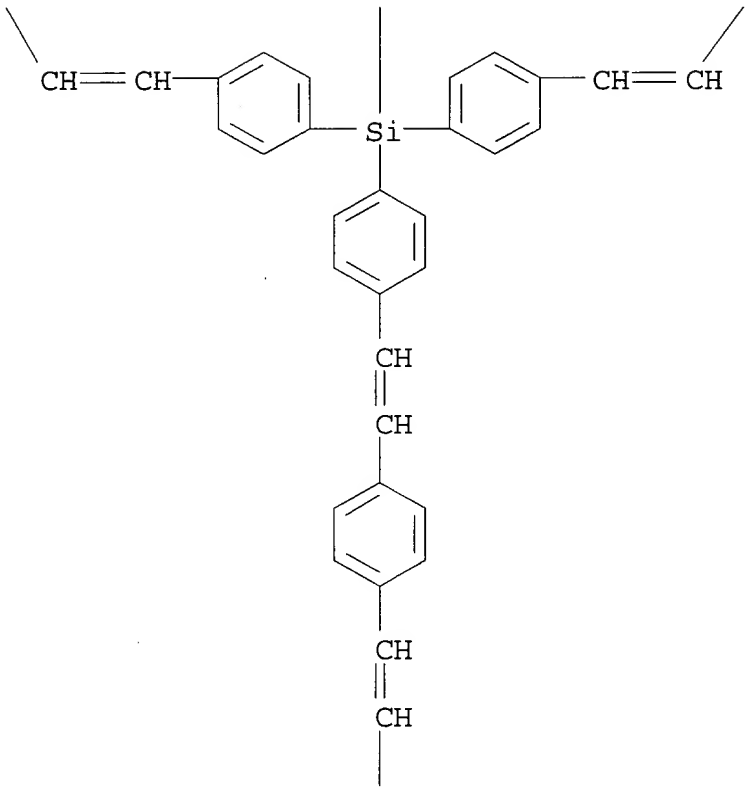

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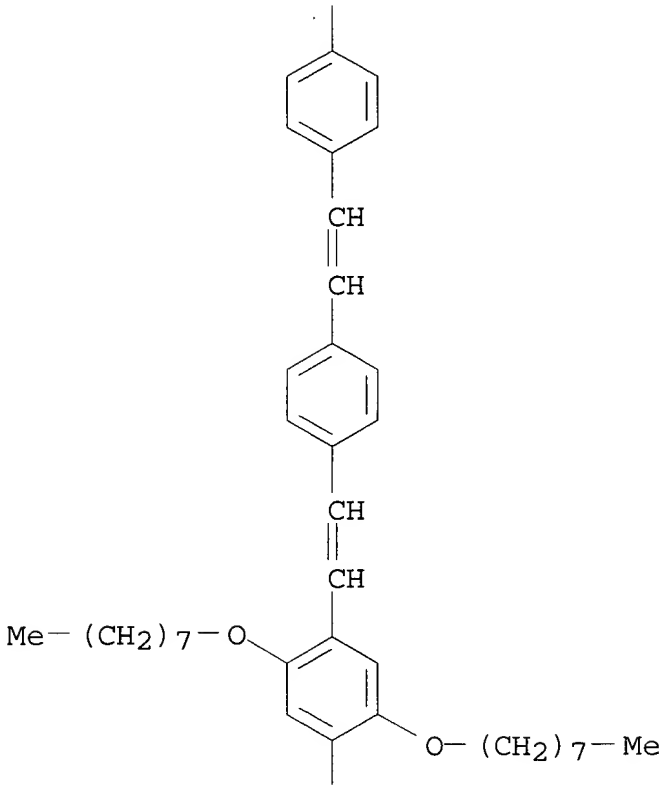

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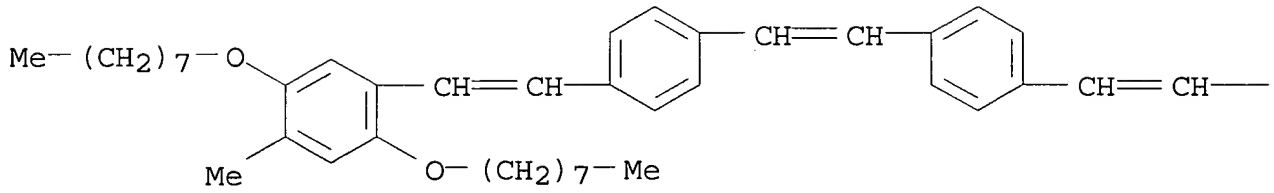
IT **433729-27-2**
(prepn. and luminescence of silanes tris- and tetrakis-substituted with oligo(phenylenevinylene))
RN 433729-27-2 HCAPLUS
CN Benzaldehyde, 4-[2-[4-[2-[4-[2-[4-methyl-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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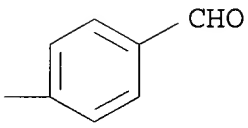


CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73

IT **Electrooptical** effect
Fluorescence
Luminescence
(prepn. and luminescence of silanes tris- and tetrakis-substituted with oligo(phenylenevinylene))

IT **433729-28-3P 433729-29-4P 433729-30-7P**
433729-31-8P 433729-32-9P 433729-33-0P
(prepn. and luminescence of silanes tris- and tetrakis-substituted with oligo(phenylenevinylene))

IT 18768-81-5 433729-14-7 433729-23-8 433729-24-9 433729-26-1
433729-27-2
(prepn. and luminescence of silanes tris- and tetrakis-substituted with oligo(phenylenevinylene))

L95 ANSWER 6 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2002:73745 Document No. 136:269801 Coherent effects in energy transport in model dendritic structures investigated by ultrafast fluorescence anisotropy spectroscopy. Varnavski, Oleg P.; Ostrowski, Jacek C.; Sukhomlinova, Ludmila; Twieg, Robert J.; Bazan, Guillermo C.; Goodson, Theodore, III (Department of Chemistry, Wayne State University, Detroit, MI, 48202, USA). Journal of the American Chemical Society, 124(8), 1736-1743 (English) 2002. CODEN: JACSAT. ISSN: 0002-7863. Publisher: American Chemical Society.

AB Measurements of ultrafast fluorescence anisotropy decay in model branched dendritic mols. of different symmetry are reported. These mols. contain the fundamental branching center units of larger dendrimer macromols. with either three (C3)- or four (Td, **tetrahedral**)-fold symmetry. The anisotropy for a **tetrahedral** system is found to decay on a subpicosecond time scale (880 fs). This decay can be qual. explained by Forster-type

incoherent energy migration between **chromophores**. Alternatively, for a nitrogen-centered trimer system, the fluorescence anisotropy decay time (35 fs) is much shorter than that of the tetramers, and the decay cannot be attributed to an incoherent hopping mechanism. In this case, a coherent interchromophore energy transport mechanism should be considered. The mechanism of the ultrafast energy migration process in the branched systems is interpreted by use of a phenomenol. quantum mech. model, which examines the two extreme cases of incoherent and coherent interactions.

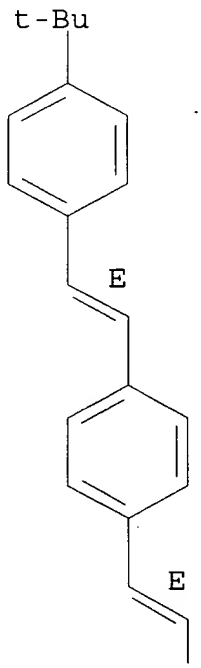
IT **288105-00-0P 372076-59-0P**
(coherent effects in interchromophore transfer of excitation energy in dendritic mols. studied by ultrafast fluorescence anisotropy decay)

RN 288105-00-0 HCAPLUS

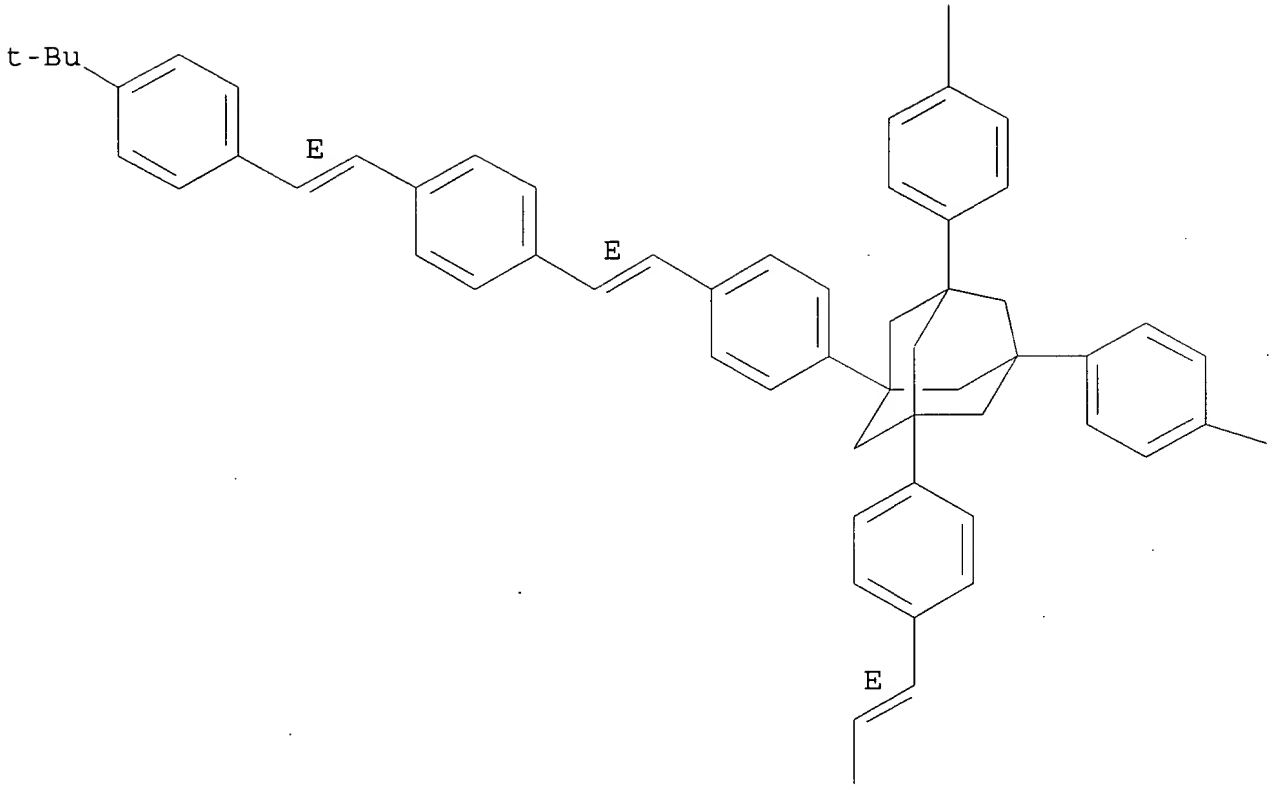
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

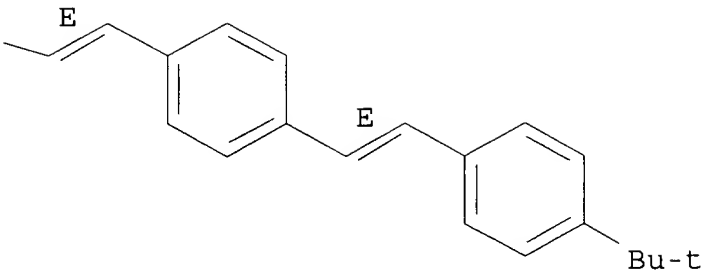
PAGE 1-A



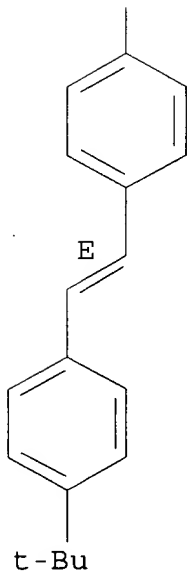
PAGE 2-A



PAGE 2-B



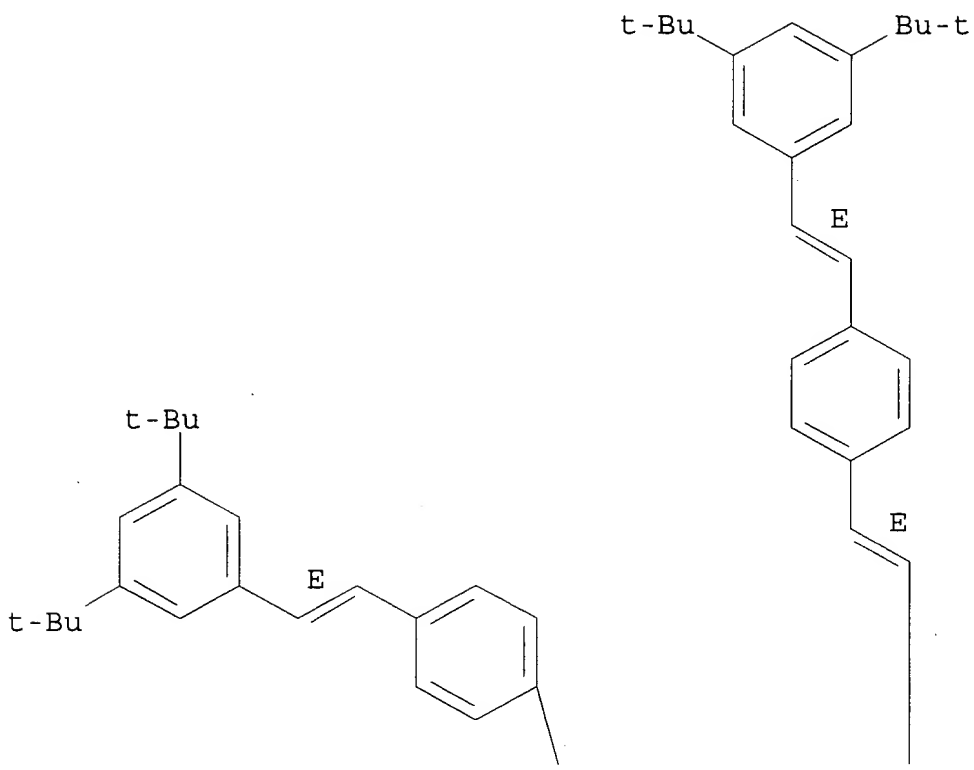
PAGE 3-A



RN 372076-59-0 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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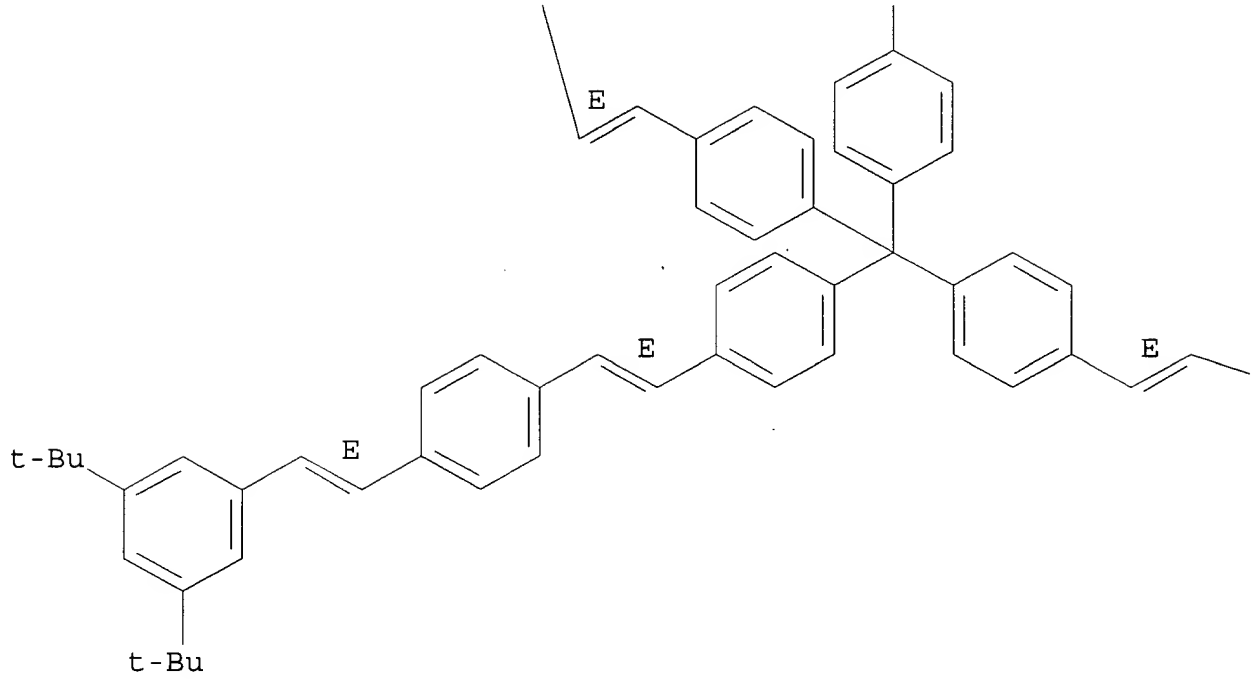

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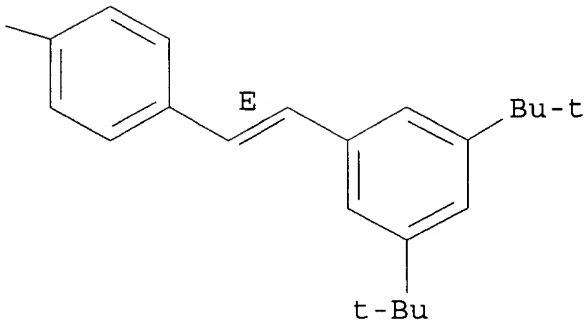


CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 74

IT **288105-00-0P 372076-59-0P** 405150-93-8P,
Tris[p-(4-nitrophenylethynyl)phenyl]amine
(coherent effects in interchromophore transfer of excitation energy in dendritic mols. studied by ultrafast fluorescence anisotropy decay)

L95 ANSWER 7 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2002:83 Document No. 136:270054 A **tetrahedral** oligo(phenylvinylene) molecule of intermediate dimensions: effect of molecular shape on the morphology and **electroluminescence** of organic glasses. Robinson, Matthew R.; Wang, Shujun; Heeger, Alan J.; Bazan, Guillermo C. (Dep. Chem., Dep. Mat. Science Inst. Polymers and Organic Solids, Univ. California, Santa Barbara, CA, 93106, USA). Advanced Functional Materials, 11(6), 413-419 (English) 2001. CODEN: AFMDC6. ISSN: 1616-301X. Publisher: Wiley-VCH Verlag GmbH.

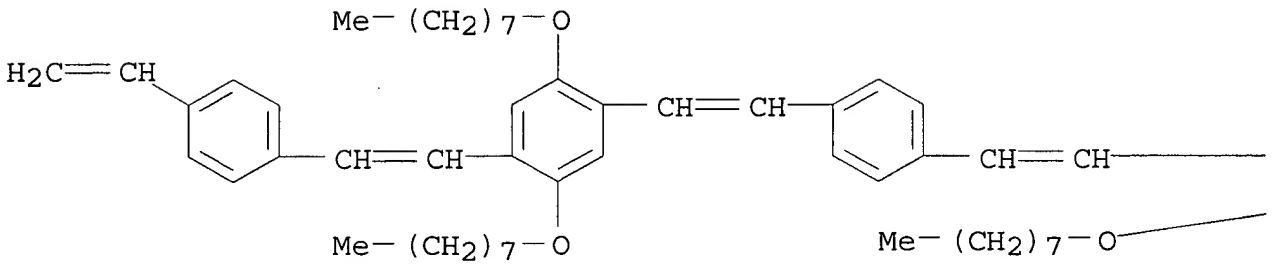
AB Tetrakis[4-(4'-2'',5''-dioctyloxy-4''-(4'''-(2'''',5''''-dioctyloxy-4''''-styryl)styryl)styryl)phenyl]methane (T-6R-OC8H17) is an org. **chromophore** that consists of four **optoelectronic** fragments (arms) connected to a **tetrahedral** point of convergence (C). Bulk samples are amorphous as detd. by powder diffraction, while DSC is sometimes ambiguous. Film forming properties were studied by at. force microscopy (AFM) and fluorescence microscopy as a function of casting solvent and heat treatment. The film forming qualities are useful for the fabrication of **light-emitting** diodes with low turn-on voltages. Device performance is also history dependent. The relation between bulk morphol., film topol., photoluminescence (PL) properties, and **light-emitting** diode (LED) performance is discussed. A comparison of these compds. against the parent oligo(phenylenevinylene) arms, with respect to morphol. topol., and PL properties is also presented.

IT **372076-63-6 372109-52-9**
(effect of mol. shape on morphol. and **electroluminescence** of org. glasses on **tetrahedral** oligo(phenylvinylene) mol. of intermediate dimensions)

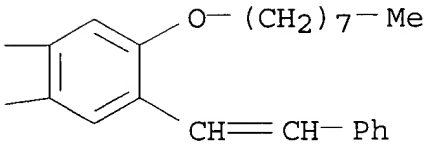
RN 372076-63-6 HCAPLUS

CN Benzene, 1-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]-4-[2-[4-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

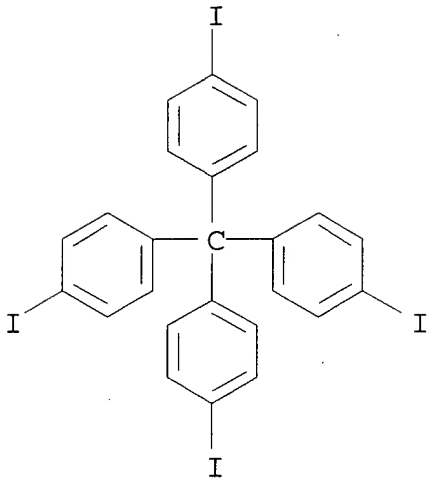


PAGE 1-B



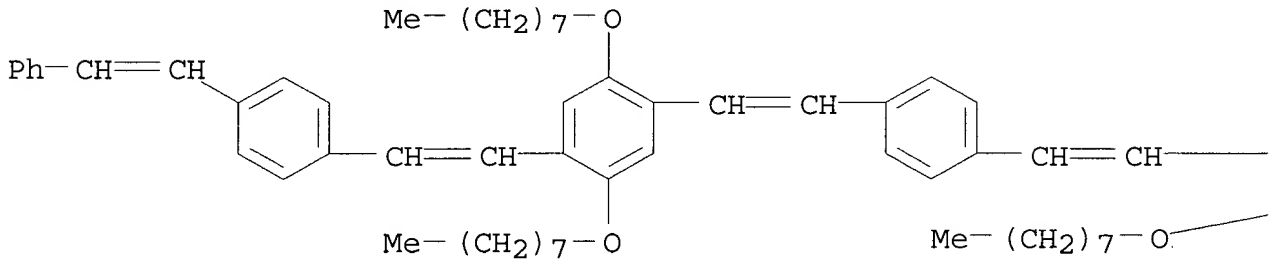
RN 372109-52-9 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-phenylethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **134080-67-4 404935-53-1**
(effect of mol. shape on morphol. and **electroluminescence** of org. glasses on **tetrahedral** oligo(phenylvinylene) mol. of intermediate dimensions)
RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)

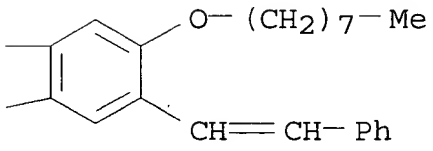


RN 404935-53-1 HCAPLUS
CN Benzene, 1-[2-[4-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)-4-[2-[4-(2-phenylethenyl)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



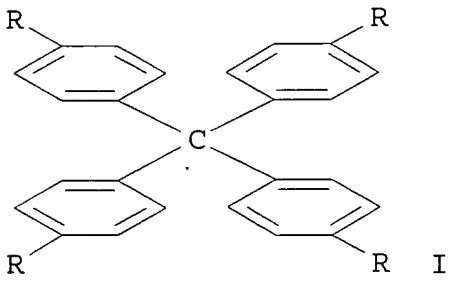
PAGE 1-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **tetrahedral** oligo phenylvinylene morphol

electroluminescent device fluorescence microscopy
IT Atomic force microscopy
Differential scanning calorimetry
Electroluminescent devices
Fluorescence microscopy
Surface roughness
UV and visible spectra
X-ray diffraction
(effect of mol. shape on morphol. and **electroluminescence** of org. glasses on **tetrahedral** oligo(phenylvinylene) mol. of intermediate dimensions)
IT **372076-63-6 372109-52-9**
(effect of mol. shape on morphol. and **electroluminescence** of org. glasses on **tetrahedral** oligo(phenylvinylene) mol. of intermediate dimensions)
IT **134080-67-4 404935-53-1**
(effect of mol. shape on morphol. and **electroluminescence** of org. glasses on **tetrahedral** oligo(phenylvinylene) mol. of intermediate dimensions)

L95 ANSWER 8 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2001:816599 Document No. 135:357757 Preparation of soluble **tetrahedral** compounds for use in **electroluminescent** devices. Bazan, Guillermo C.; Wang, Shujun; Robinson, Matthew R. (The Regents of the University of California, USA). PCT Int. Appl. WO 2001083410 A1 20011108, 74 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US14507 20010503. PRIORITY: US 2000-PV201720 20000503.
GI



I

AB **Electroluminescent tetrahedral** stilbenoids, such as R1TS(R2)(R3)R4 [TS = **tetrahedral** junction unit, such as C, Si, adamantyl; R1, R2, R3, R4 = hybrid **optoelectronic chromophore**, such as stilbenyl or styrylstilbenyl], were prepd. for use as amorphous mol. solids suitable for forming thin films in **optoelectronic** devices. Thus, stilbenoid I (R = Ph2C:CH-4-C6H4-) was prepd. in 85% yield via coupling reaction of tetrakis(4-bromophenyl)methane I (R = Br) with Ph2C:CH-4-C6H4-B(OH)2 catalyzed by Pd(dppf)Cl2 in THF. Optical properties of the prepd. stilbenoids were evaluated by absorption and fluorescence emission spectral data. Also, fabrication of **electroluminescent** devices using the prepd. sol. **tetrahedral** tetramers was discussed.

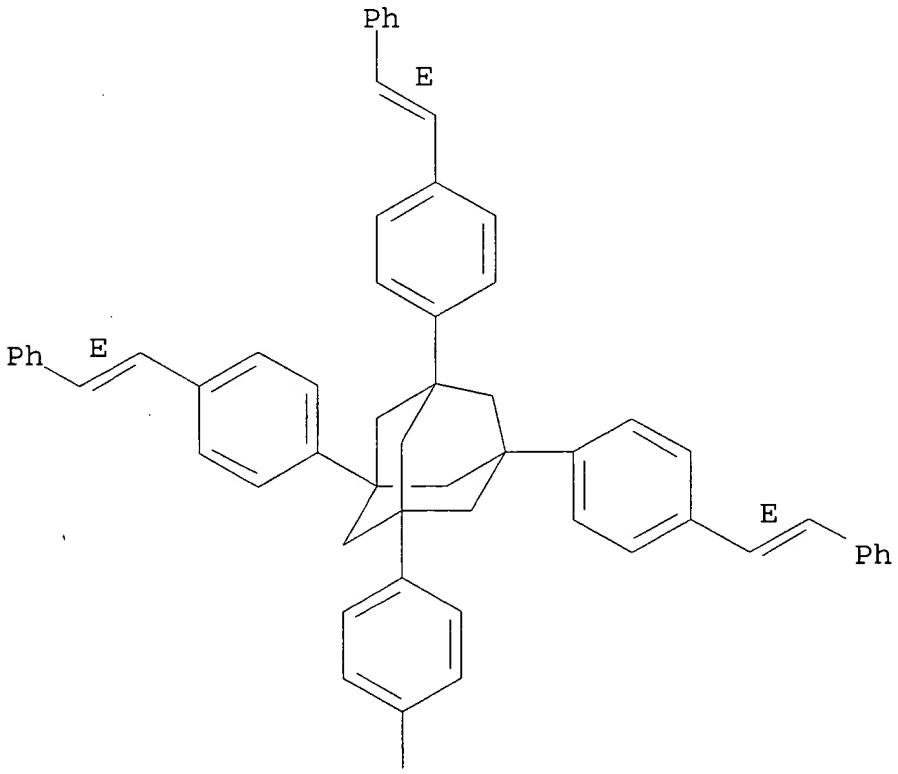
IT **288104-98-3P 288104-99-4P 288105-00-0P**
288105-01-1P 288105-05-5P 288105-08-8P
288105-10-2P 288105-12-4P 288105-13-5P
288105-15-7P 372076-56-7P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

RN 288104-98-3 HCAPLUS

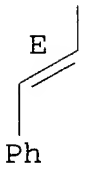
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

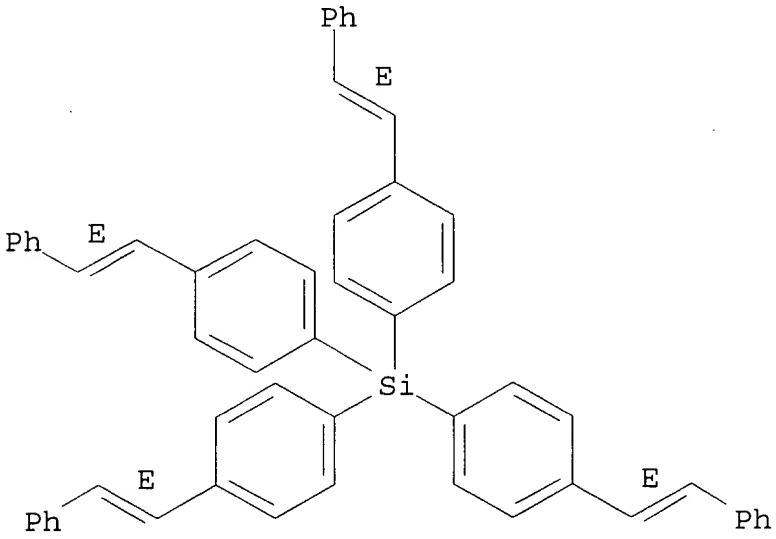


PAGE 2-A



RN 288104-99-4 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

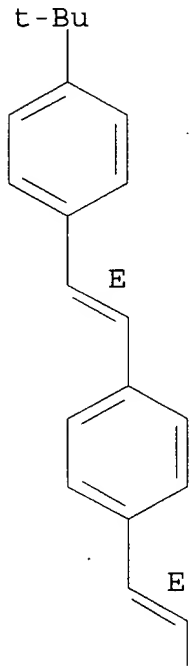
Double bond geometry as shown.



RN 288105-00-0 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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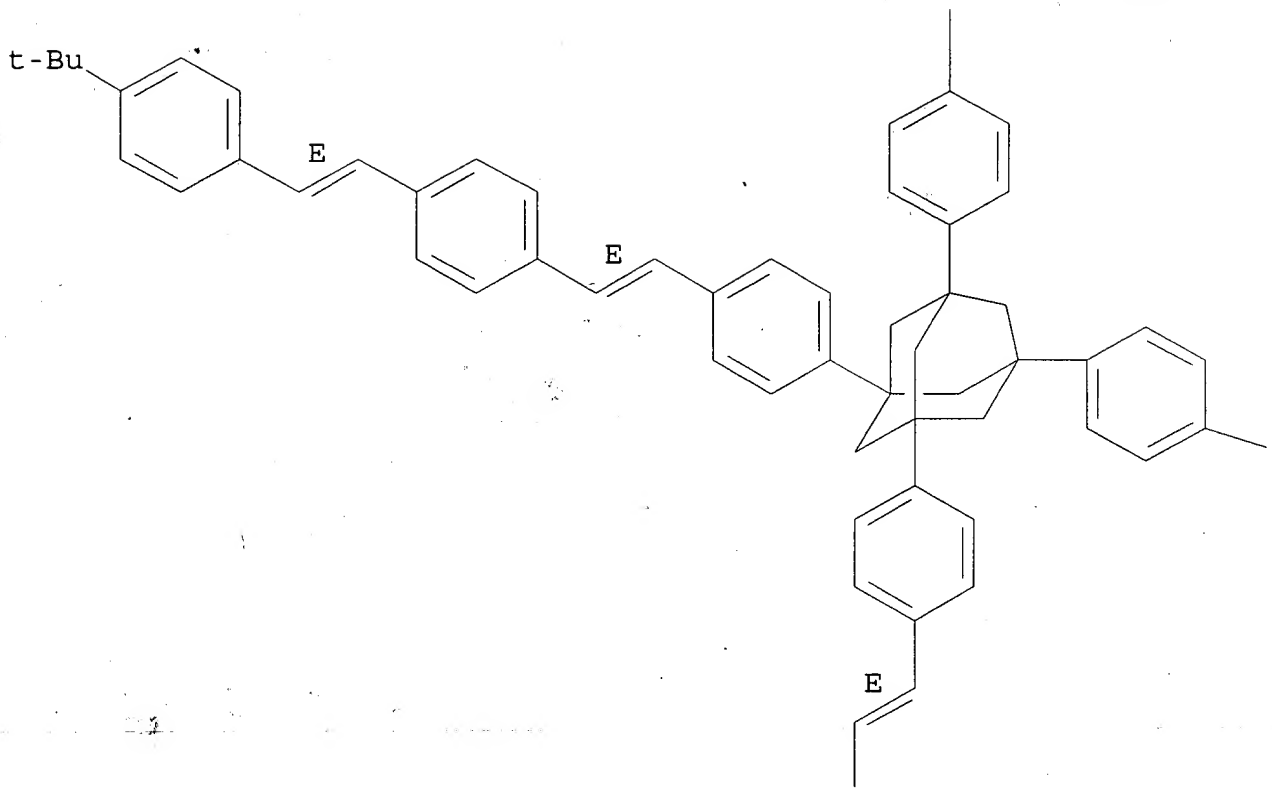

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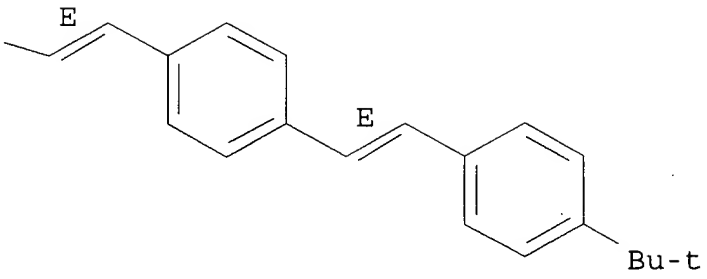
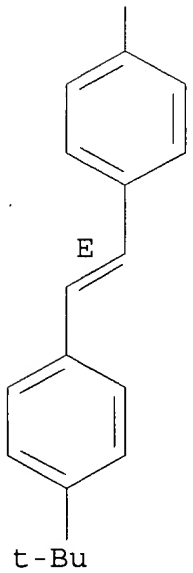


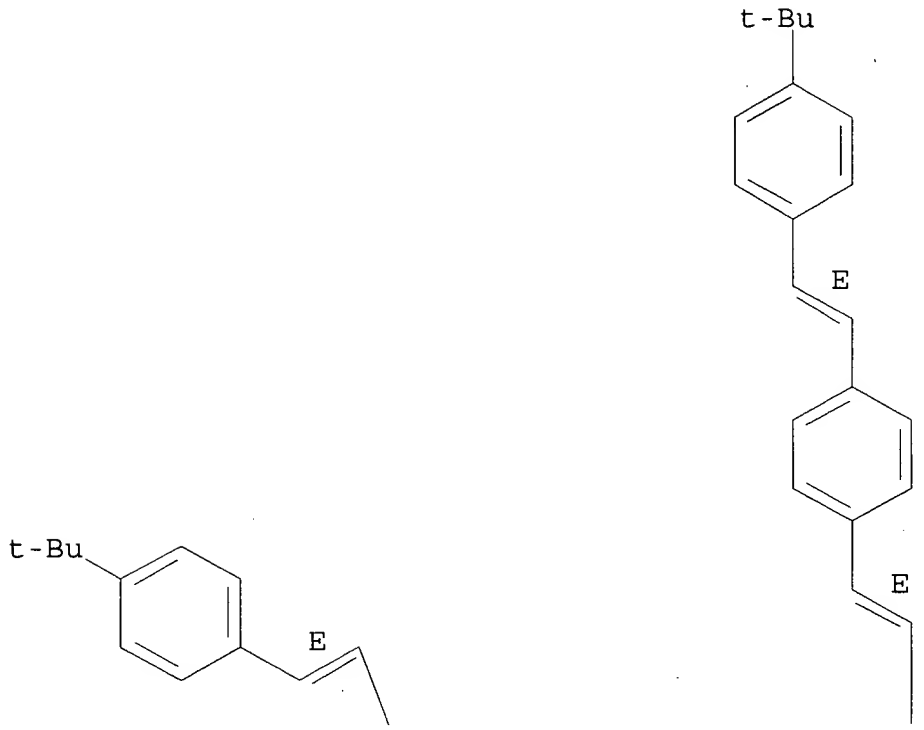
PAGE 3-A



RN 288105-01-1 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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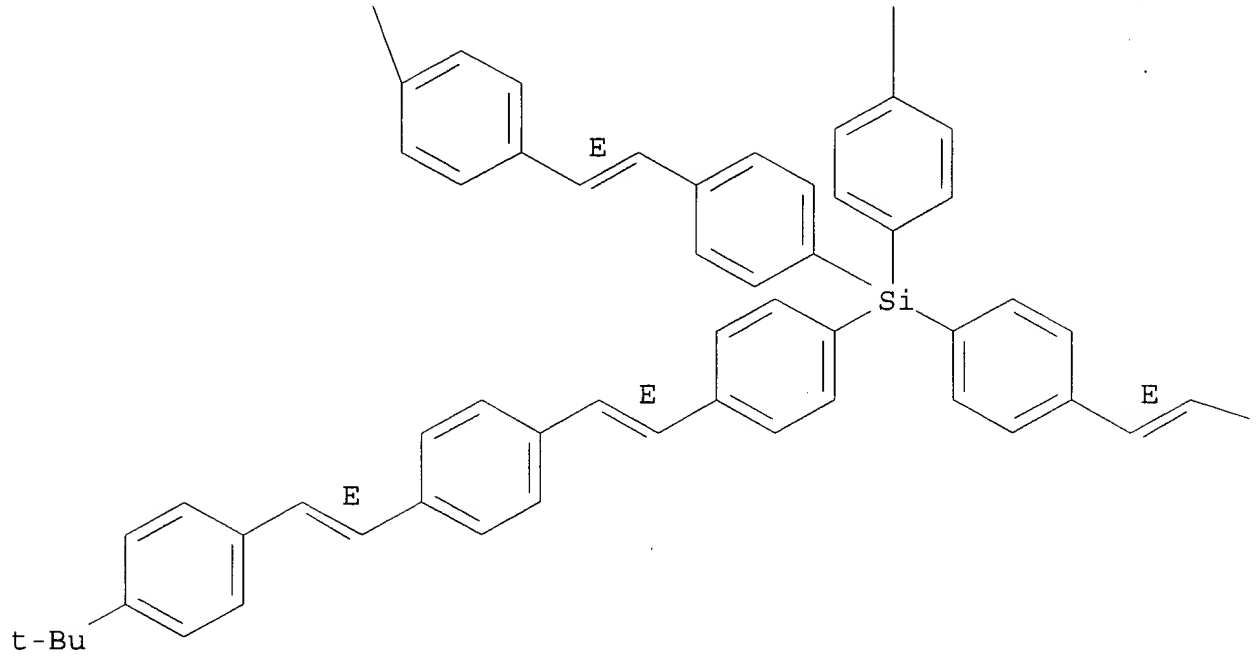
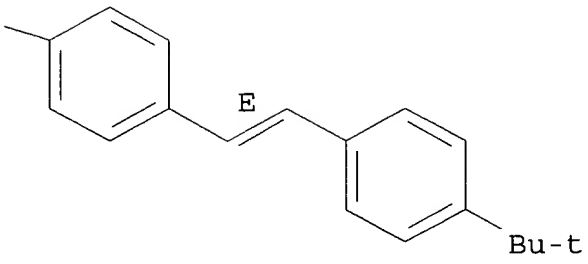


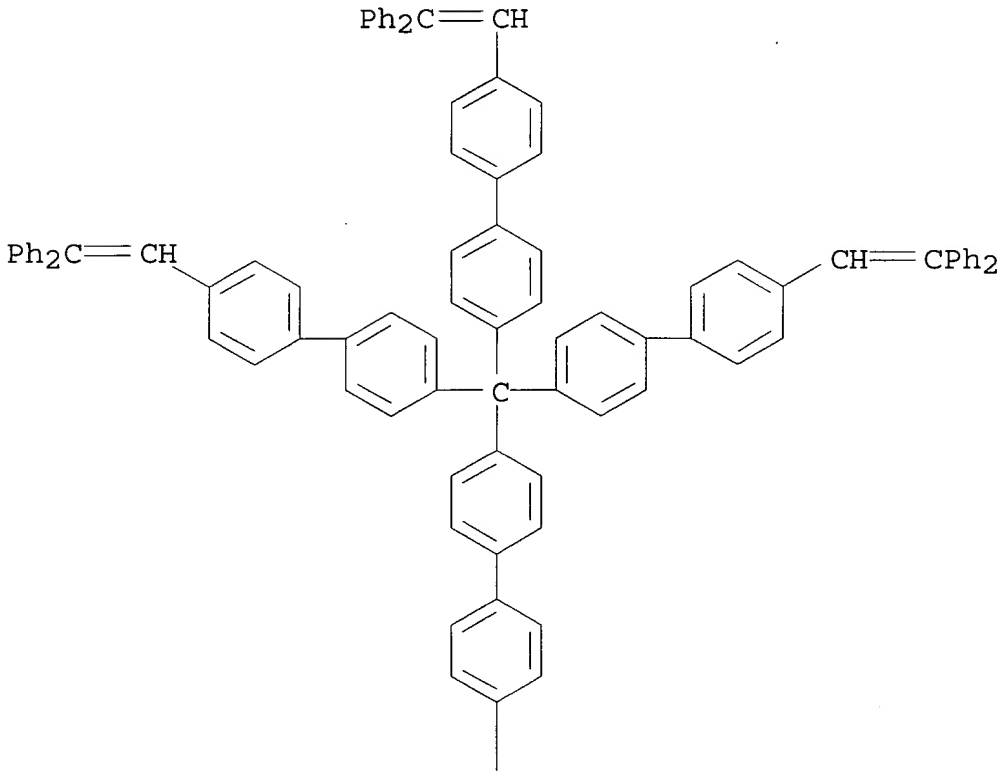
PAGE 2-B



RN 288105-05-5 HCAPLUS

CN 1,1'-Biphenyl, 4,4'',4'''',4''''''-methanetetrayltetrakis[4'-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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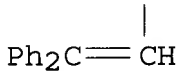
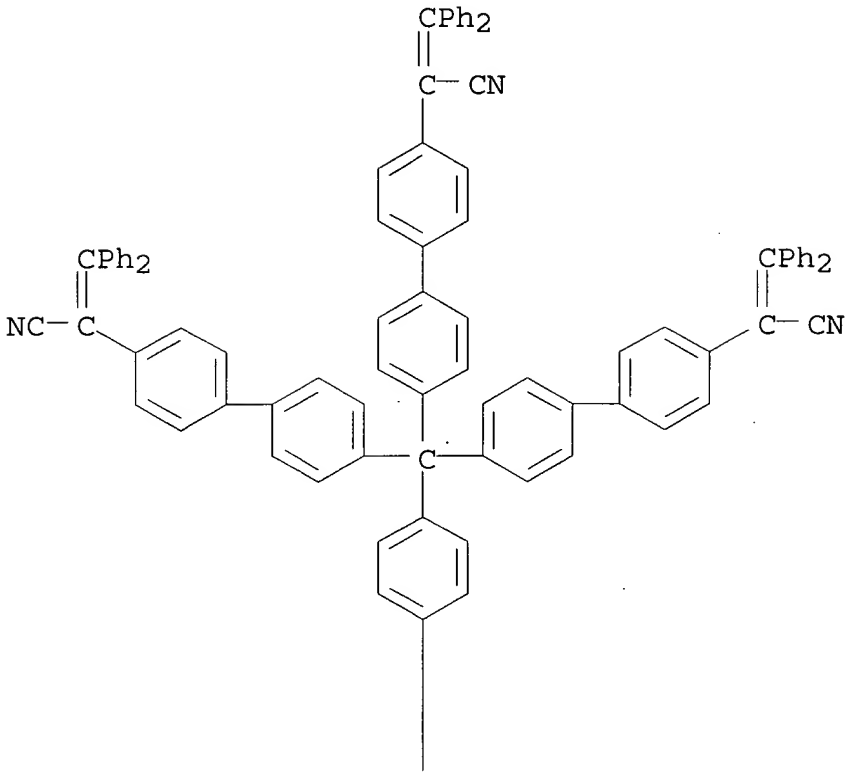


RN 288105-08-8 HCAPLUS
CN [1,1'-Biphenyl]-4-acetonitrile, 4',4''',4''''',4'''''''-methanetetrayltetrakis[.alpha.-(diphenylmethylene)- (9CI) (CA INDEX NAME)

PAGE 1-A



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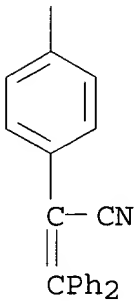
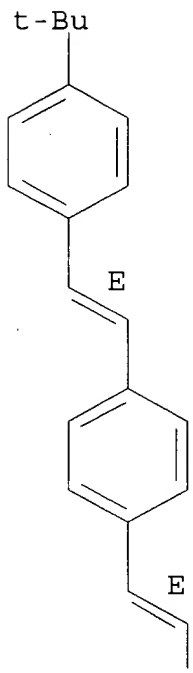


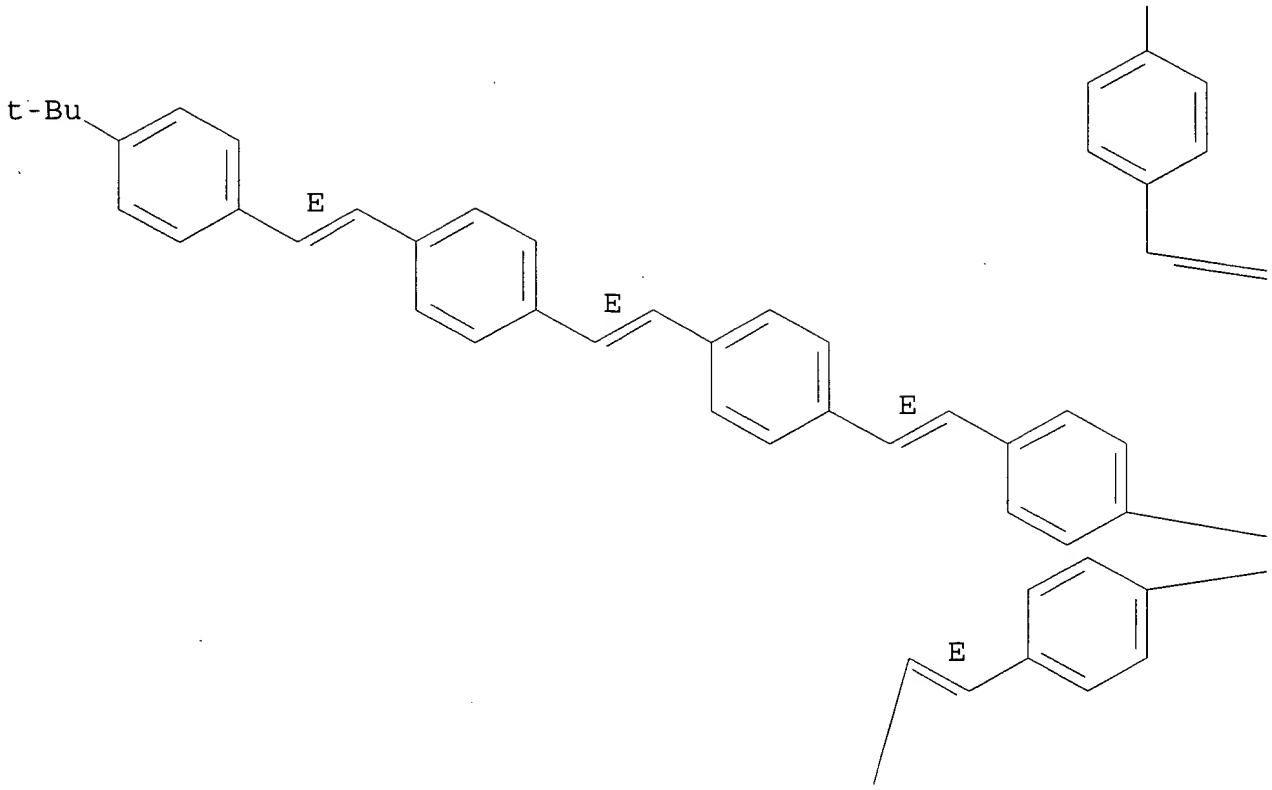
RN 288105-10-2 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 2-A



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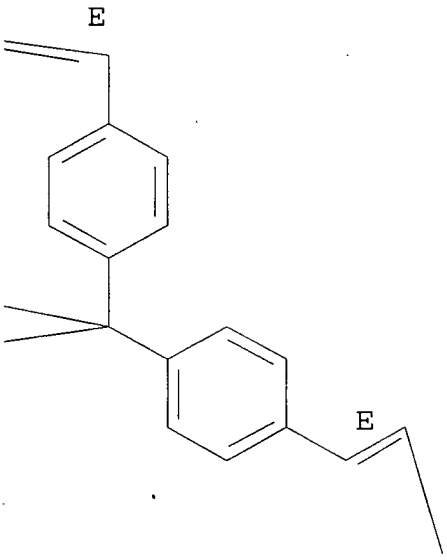
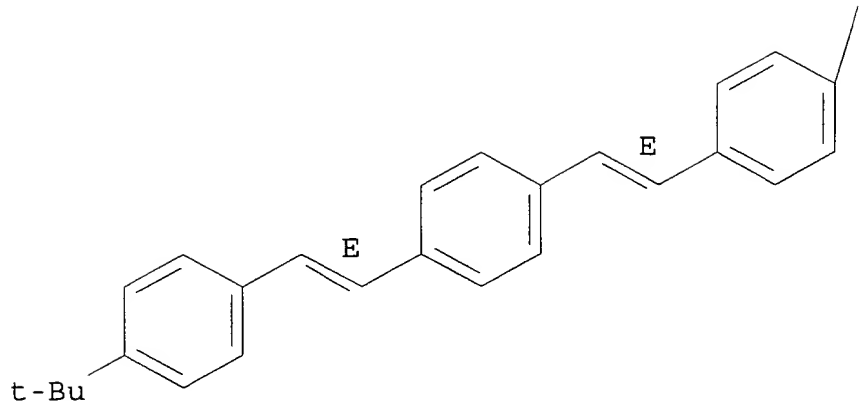


PAGE 3-A



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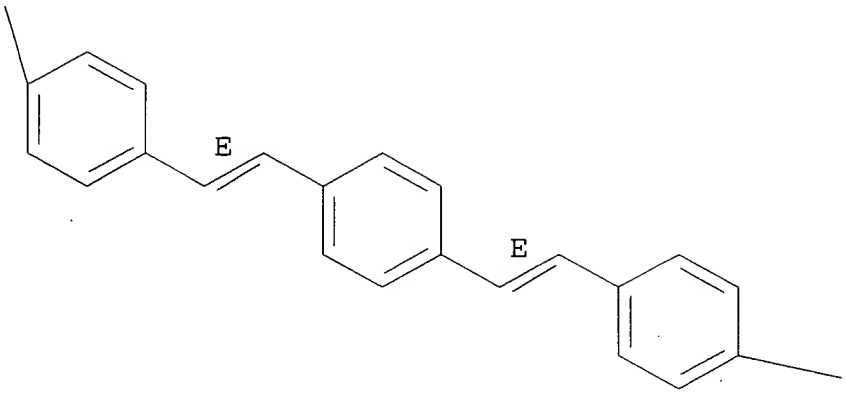


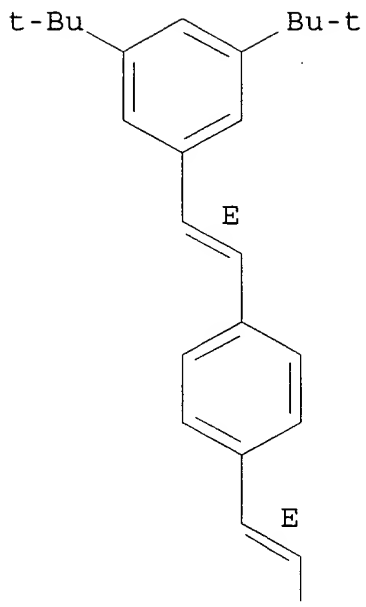
PAGE 3-C

—Bu-t

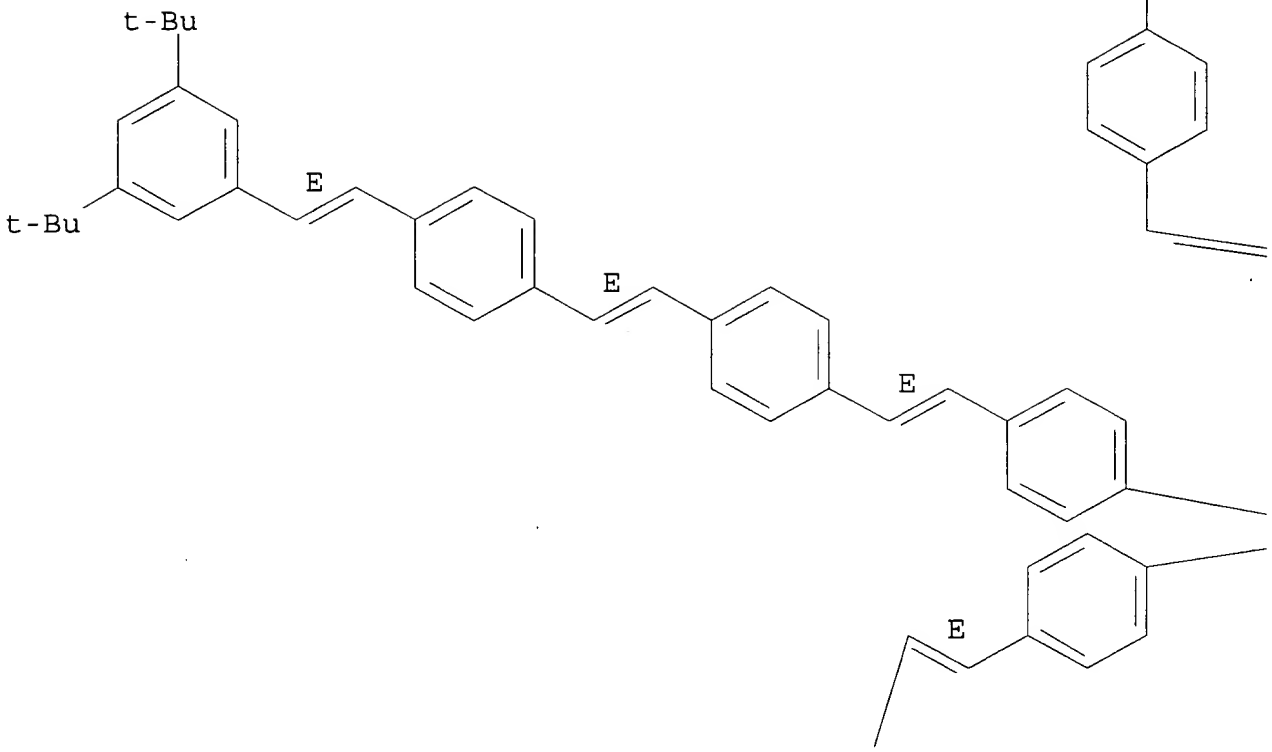
RN 288105-12-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

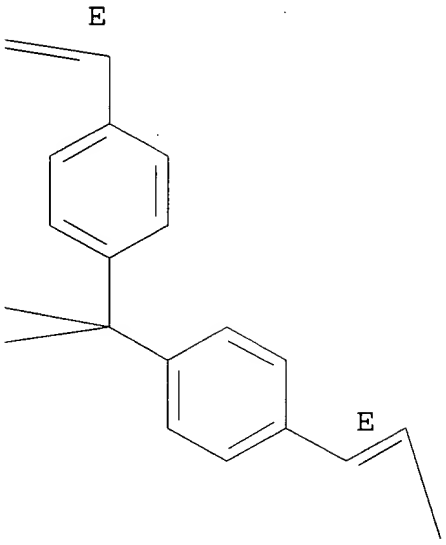
PAGE 1-A



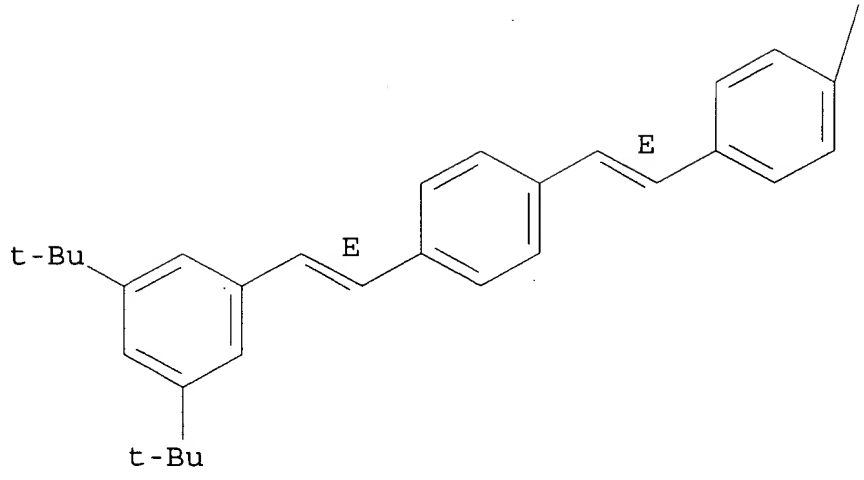
PAGE 2-A



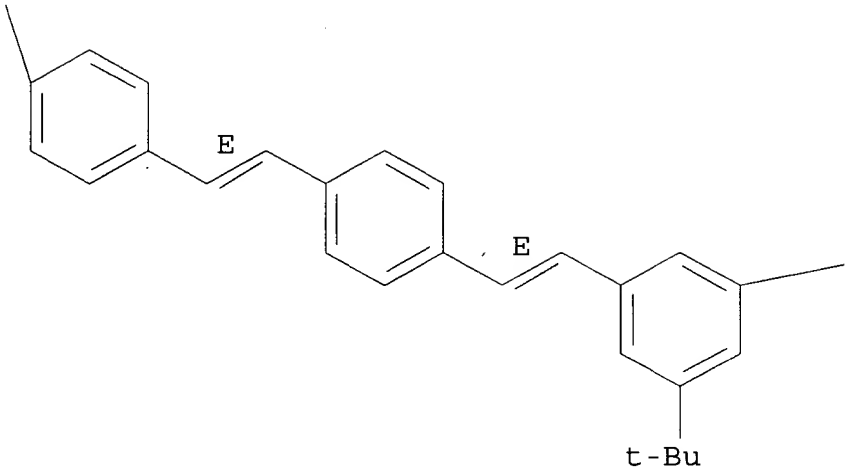
PAGE 2-B



PAGE 3-A



PAGE 3-B

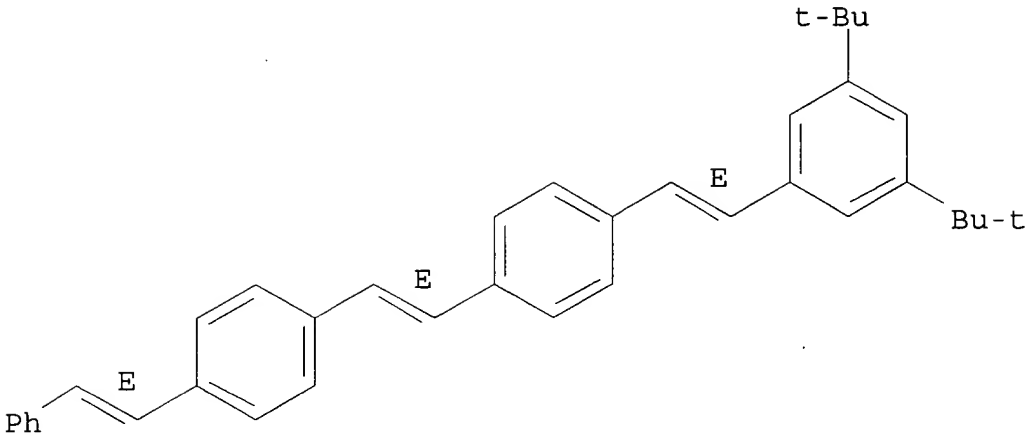


PAGE 3-C

—Bu-t

RN 288105-13-5 HCAPLUS
CN Benzene, 1-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]-4-[(1E)-2-[4-[(1E)-2-phenylethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

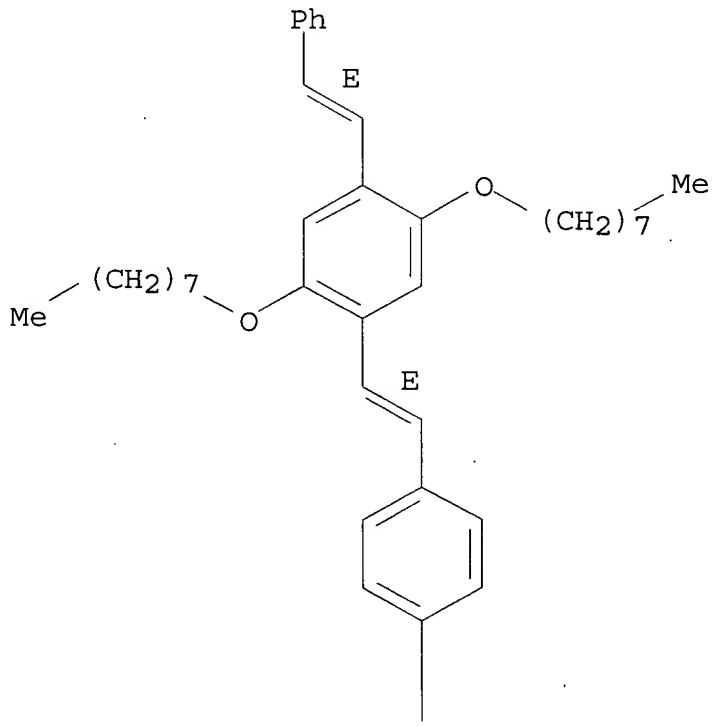
Double bond geometry as shown.

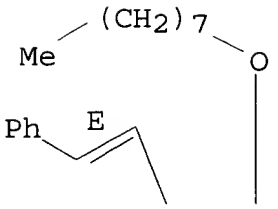


RN 288105-15-7 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[2,5-bis(octyloxy)-4-[(1E)-2-phenylethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

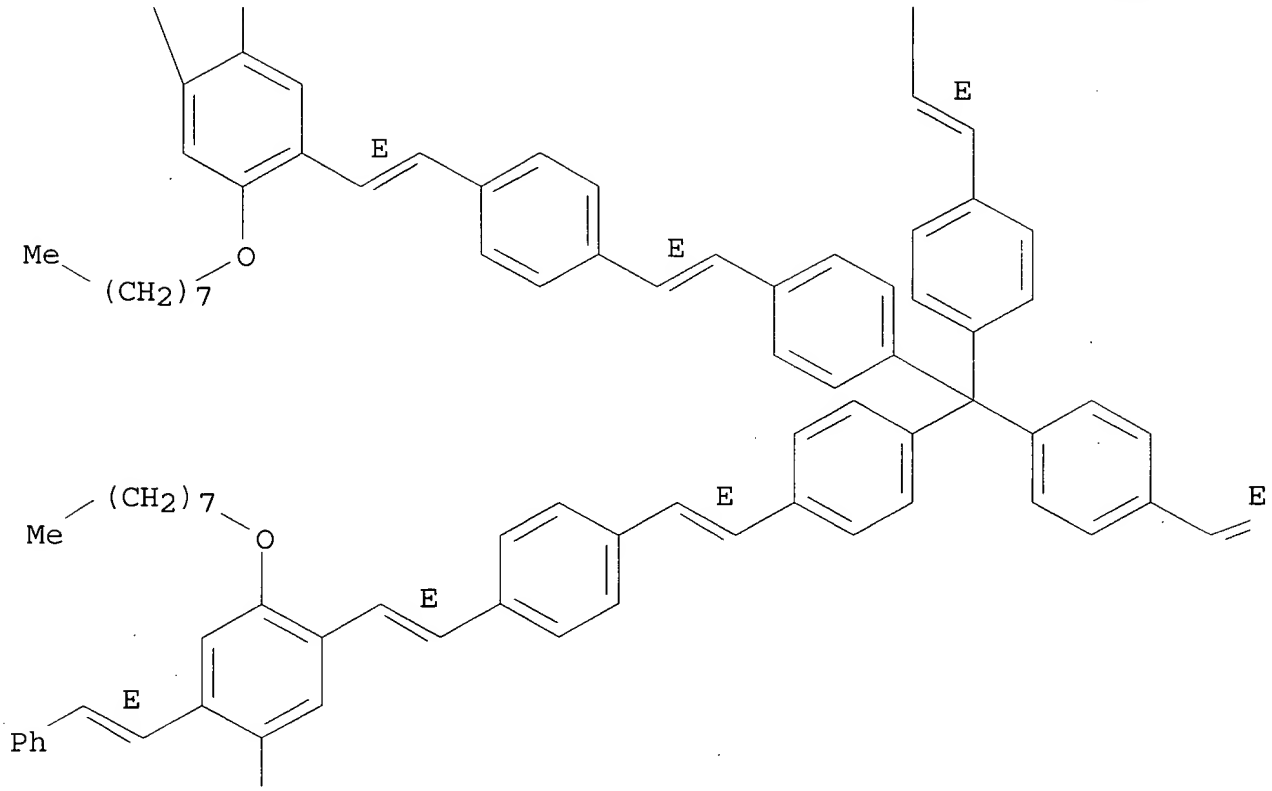
Double bond geometry as shown.

PAGE 1-A

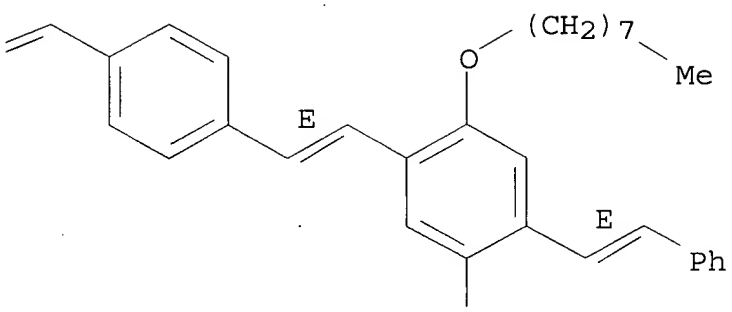




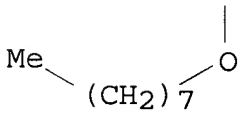
PAGE 2-A



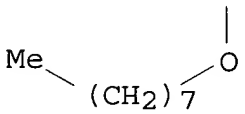
PAGE 2-B



PAGE 3-A



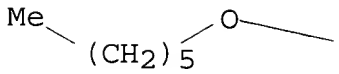
PAGE 3-B



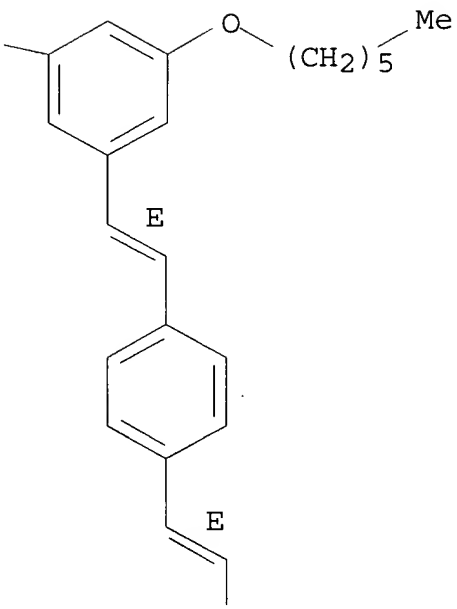
RN 372076-56-7 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(hexyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

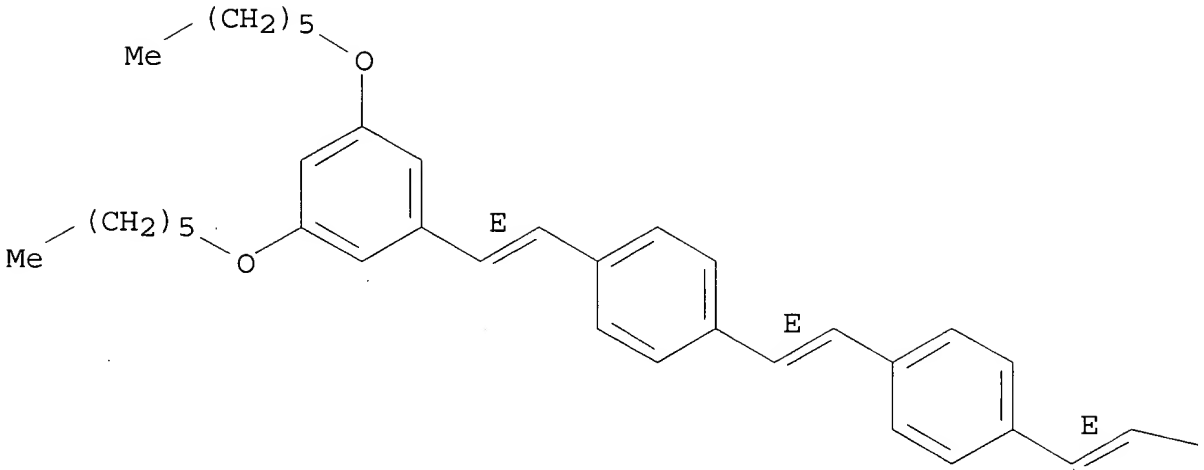
PAGE 1-A

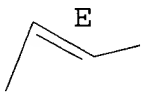


PAGE 1-B

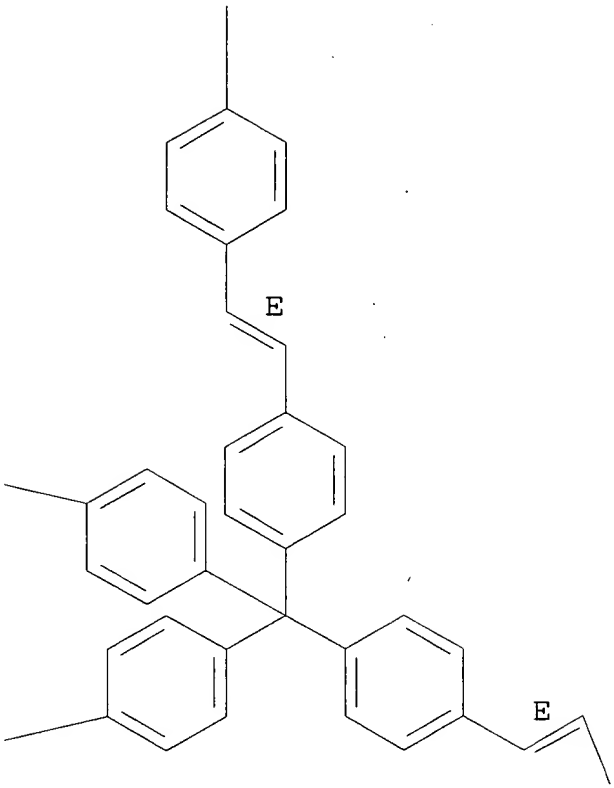


PAGE 2-A

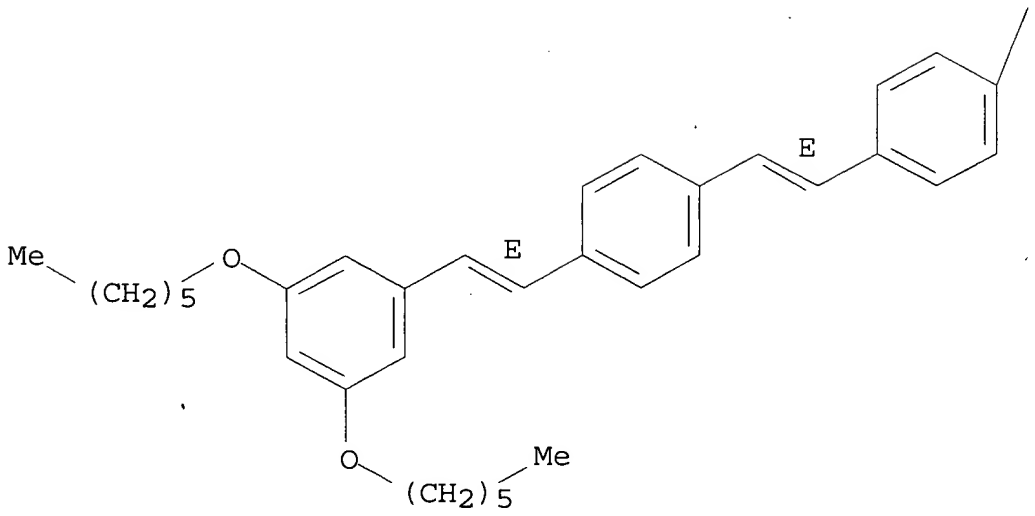




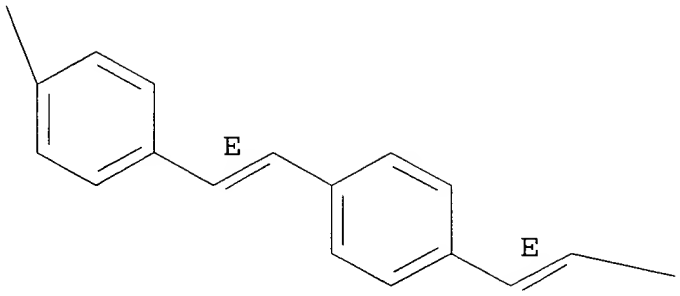
PAGE 2-B



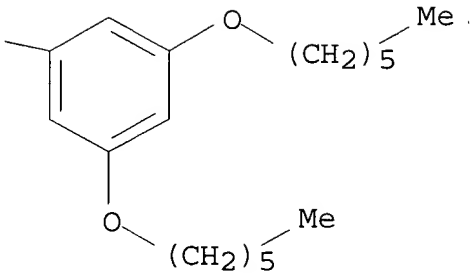
PAGE 3-A



PAGE 3-B



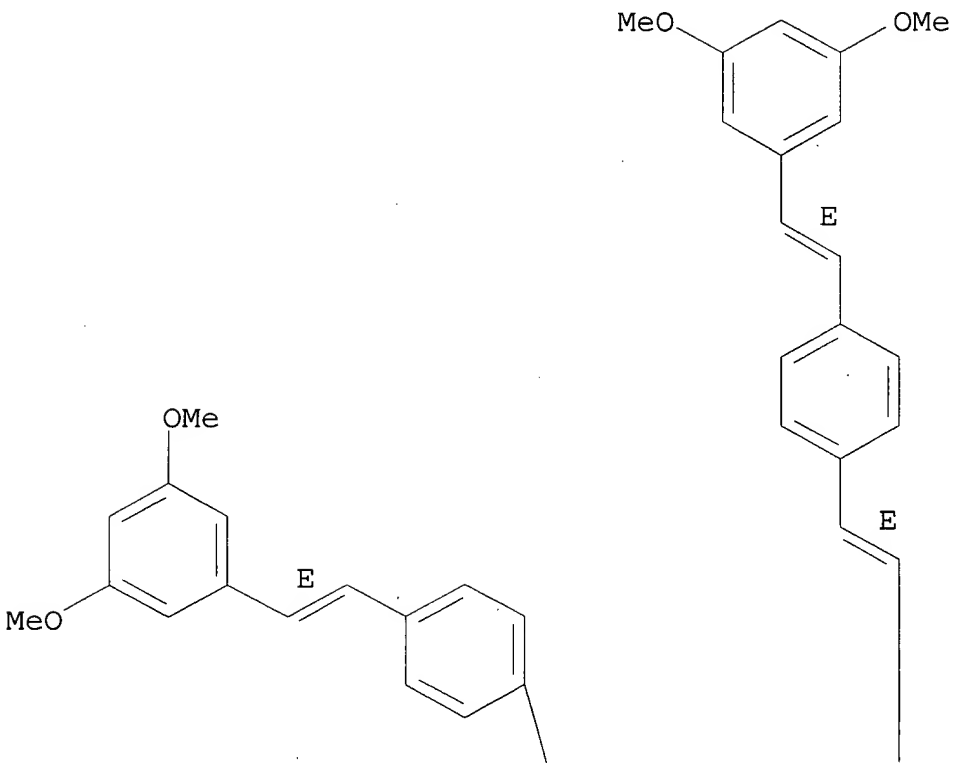
PAGE 3-C



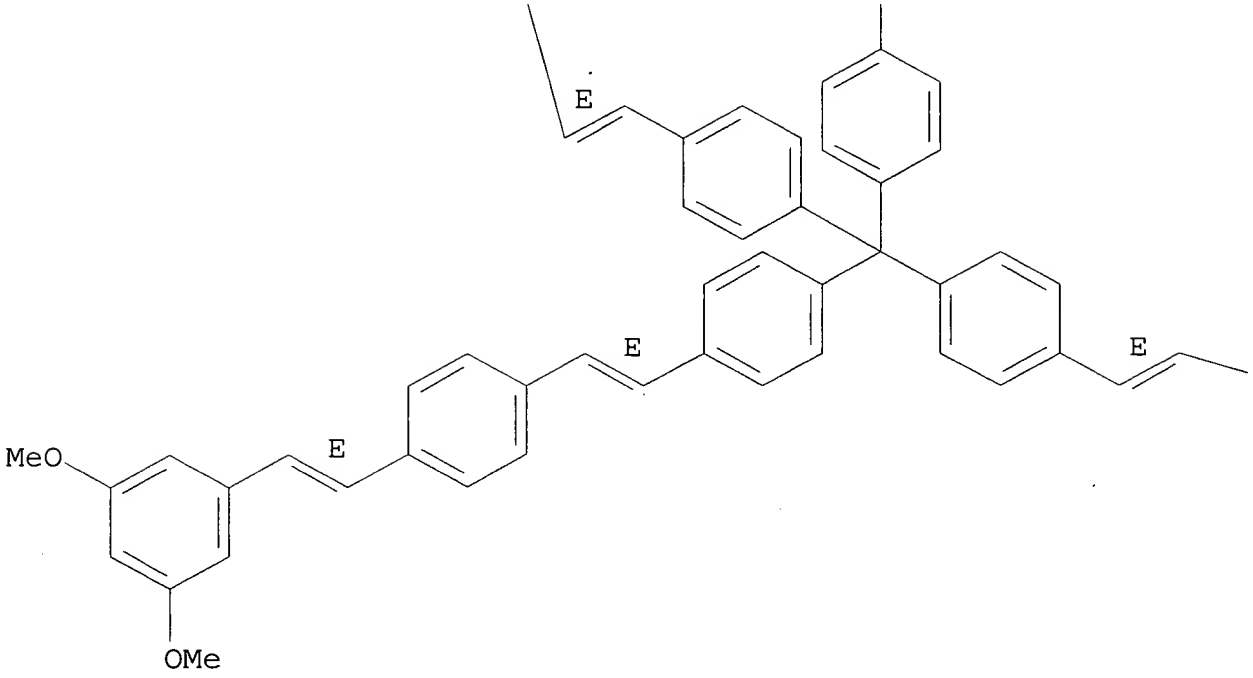
IT **336195-49-4P 372076-58-9P 372076-59-0P**
372109-52-9P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)
RN 336195-49-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-(3,5-dimethoxyphenyl)ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 2-A



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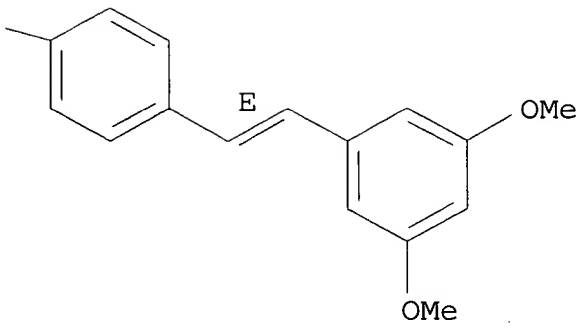
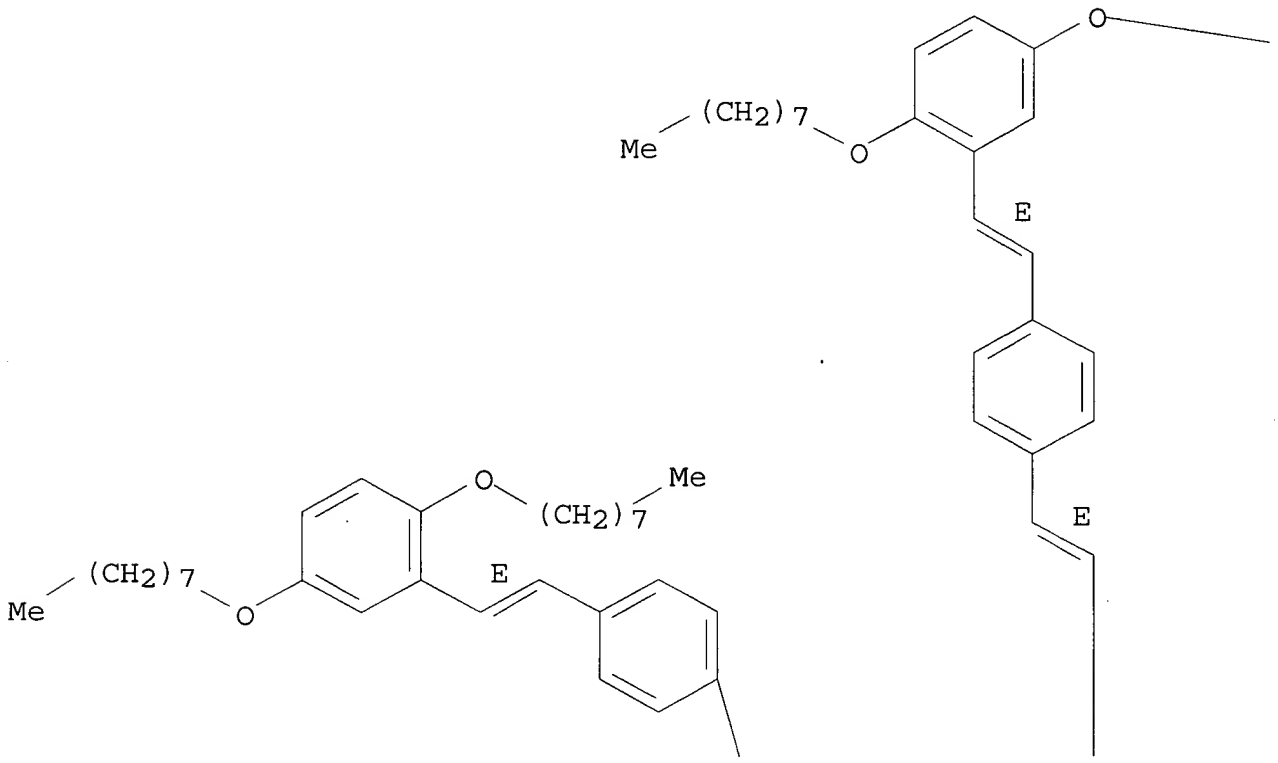


RN 372076-58-9 HCAPLUS

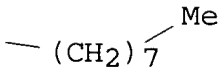
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

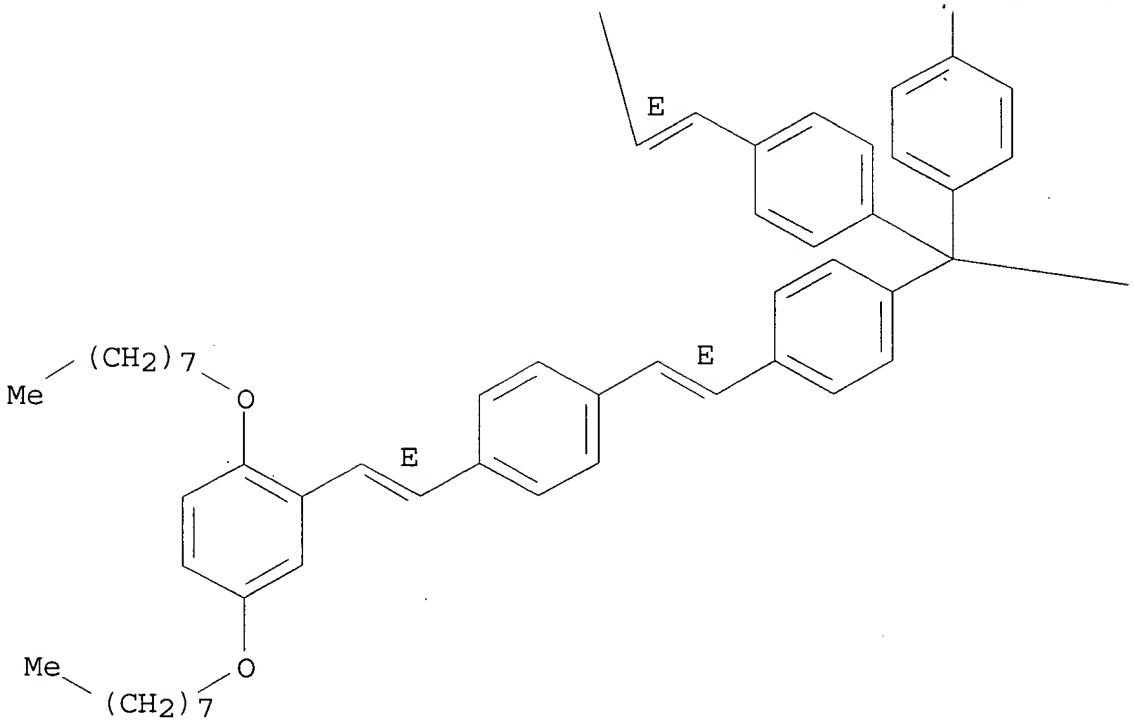
PAGE 1-A



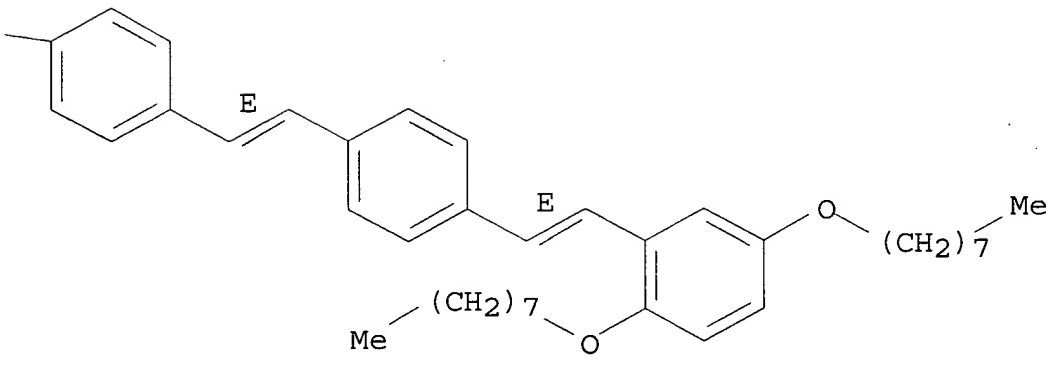
PAGE 1-B



PAGE 2-A



PAGE 2-B

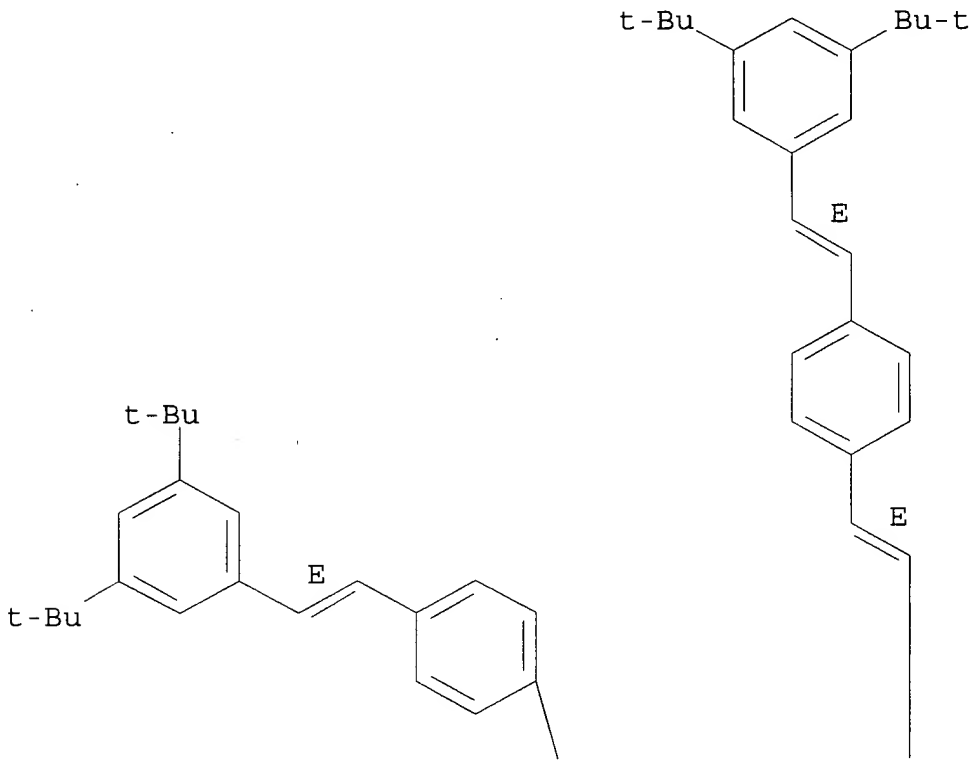


RN 372076-59-0 HCAPLUS

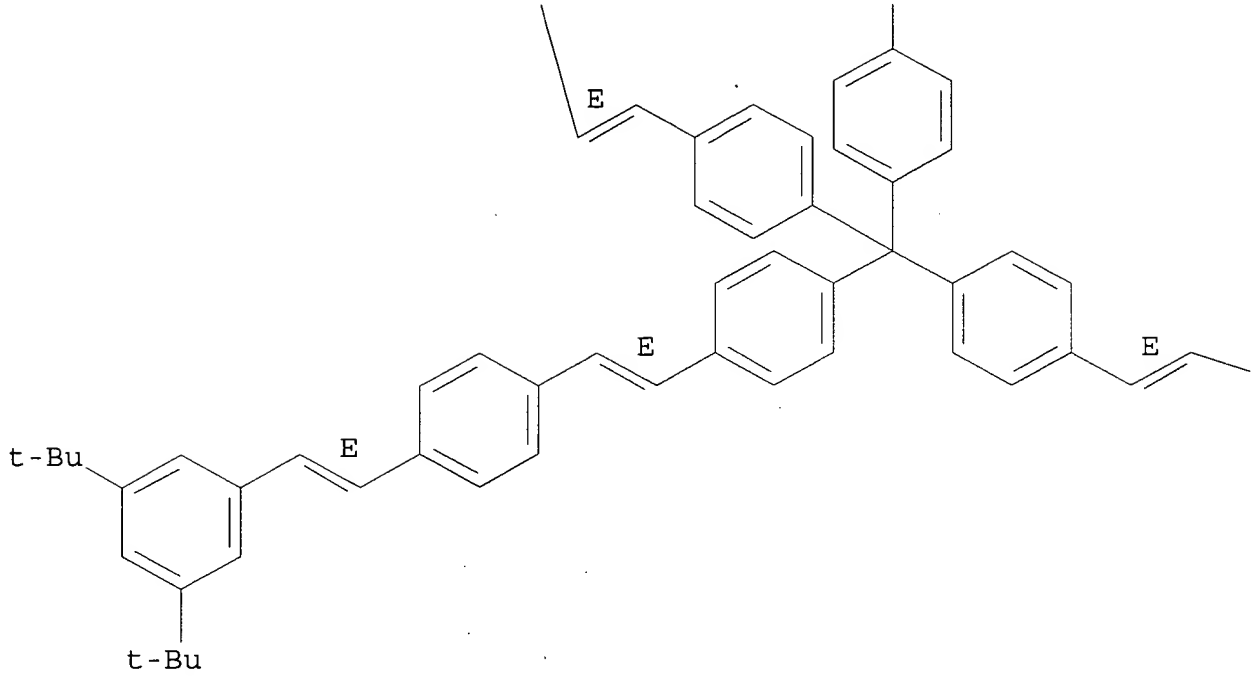
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 2-A



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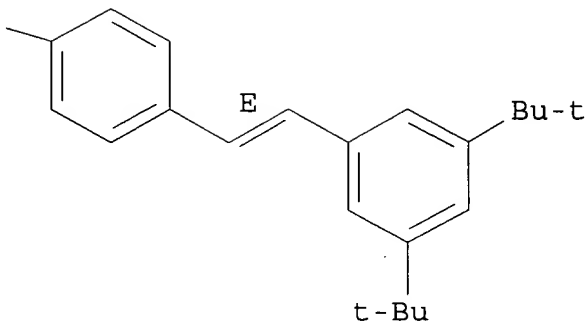


RN 372109-52-9 HCAPLUS

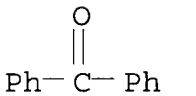
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-phenylethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **119-61-9**, reactions **1449-46-3 18733-98-7**
36393-44-9 38186-51-5 47562-35-6
65413-33-4 73183-34-3 81172-89-6
105309-59-9 134080-67-4 144970-30-9
201338-08-1 219987-82-3 338460-76-7
338460-79-0 372076-62-5 372076-63-6
372076-64-7
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

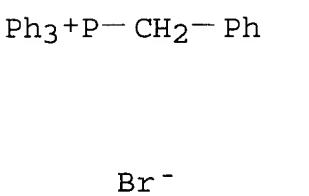
RN 119-61-9 HCAPLUS

CN Methanone, diphenyl- (9CI) (CA INDEX NAME)



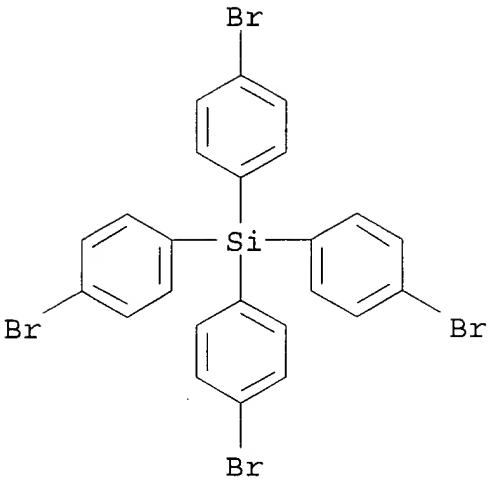
RN 1449-46-3 HCAPLUS

CN Phosphonium, triphenyl(phenylmethyl)-, bromide (9CI) (CA INDEX NAME)

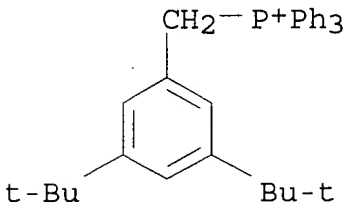


RN 18733-98-7 HCAPLUS

CN Silane, tetrakis(4-bromophenyl)- (9CI) (CA INDEX NAME)

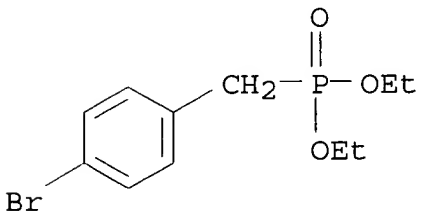


RN 36393-44-9 HCAPLUS
CN Phosphonium, [[3,5-bis(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)



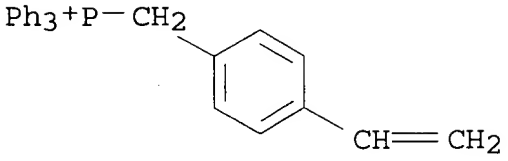
● Br⁻

RN 38186-51-5 HCAPLUS
CN Phosphonic acid, [(4-bromophenyl)methyl]-, diethyl ester (9CI) (CA INDEX NAME)



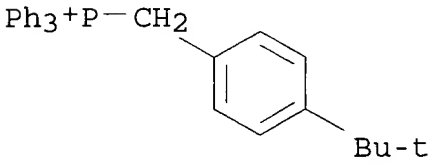
RN 47562-35-6 HCAPLUS
CN Phosphonium, [(4-ethenylphenyl)methyl]triphenyl-, chloride (9CI)

(CA INDEX NAME)



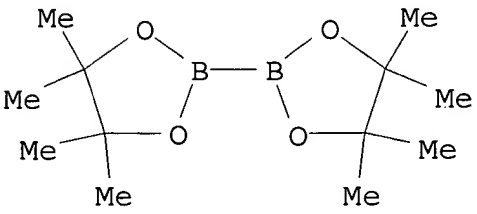
● Cl^-

RN 65413-33-4 HCAPLUS
CN Phosphonium, [[4-(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)

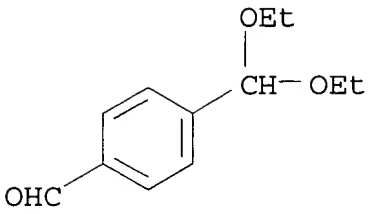


● Br^-

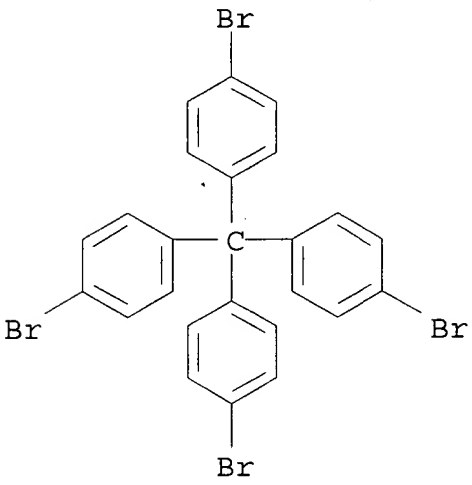
RN 73183-34-3 HCAPLUS
CN 2,2'-Bi-1,3,2-dioxaborolane, 4,4,4',4',5,5,5',5'-octamethyl- (9CI) (CA INDEX NAME)



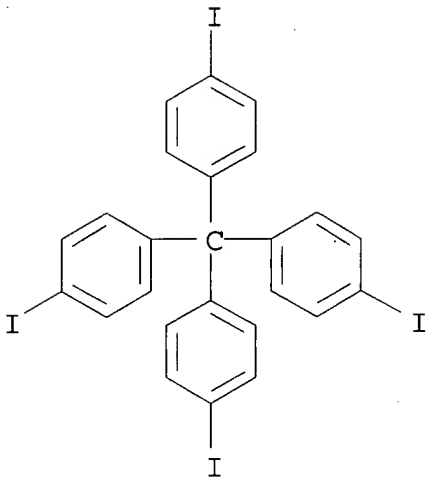
RN 81172-89-6 HCAPLUS
CN Benzaldehyde, 4-(diethoxymethyl)- (9CI) (CA INDEX NAME)



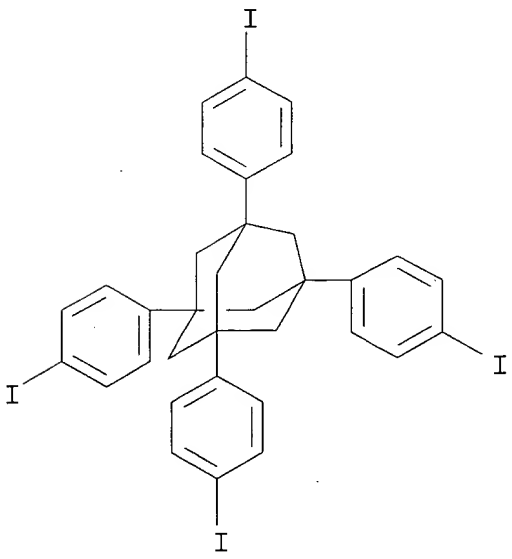
RN 105309-59-9 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-bromo- (9CI) (CA INDEX NAME)



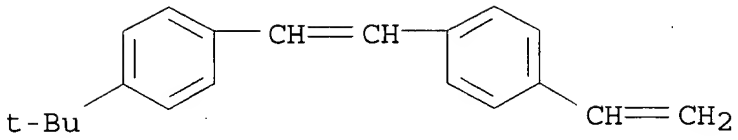
RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



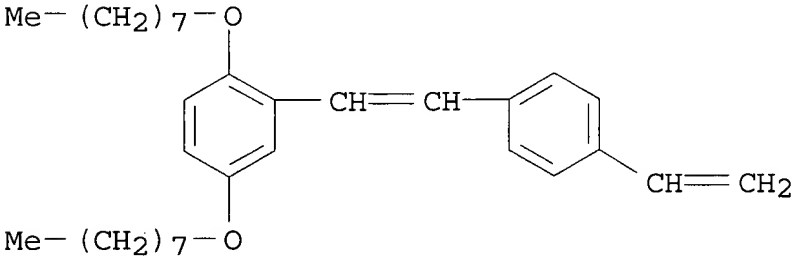
RN 144970-30-9 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis(4-iodophenyl)- (9CI) (CA INDEX NAME)



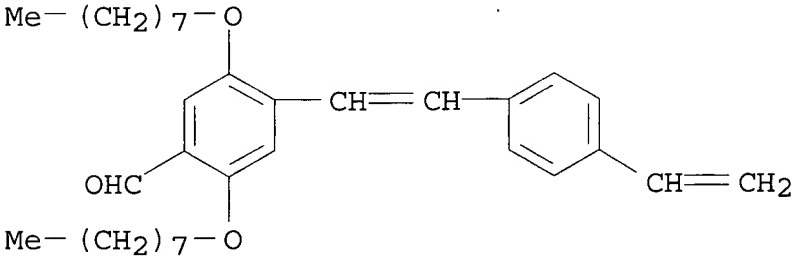
RN 201338-08-1 HCAPLUS
CN Benzene, 1-(1,1-dimethylethyl)-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



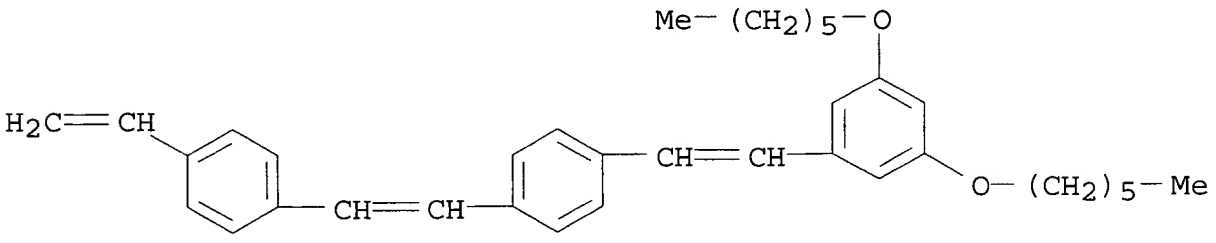
RN 219987-82-3 HCAPLUS
CN Benzene, 2-[2-(4-ethenylphenyl)ethenyl]-1,4-bis(octyloxy)- (9CI) (CA INDEX NAME)



RN 338460-76-7 HCAPLUS
CN Benzaldehyde, 4-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)- (9CI) (CA INDEX NAME)

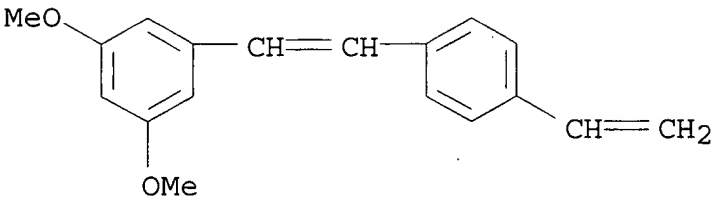


RN 338460-79-0 HCAPLUS
CN Benzene, 1-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



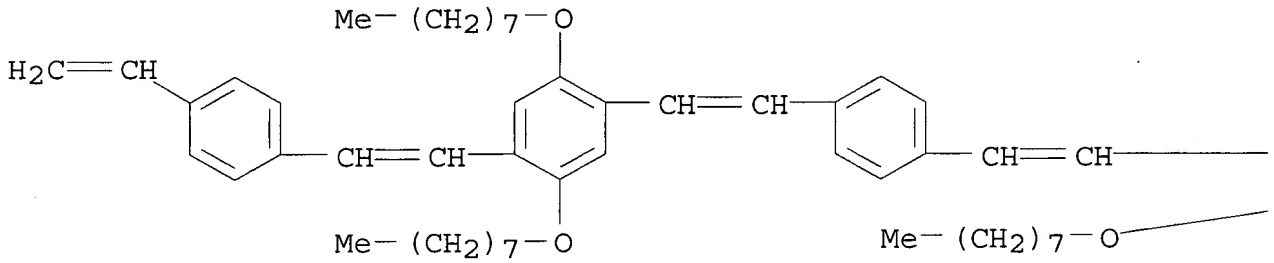
RN 372076-62-5 HCAPLUS

CN Benzene, 1-[2-(4-ethenylphenyl)ethenyl]-3,5-dimethoxy- (9CI) (CA INDEX NAME)

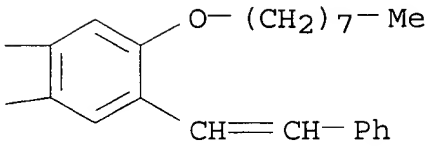


RN 372076-63-6 HCAPLUS
CN Benzene, 1-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]-4-[2-[4-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

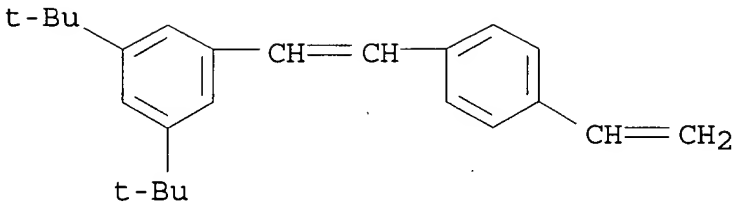
PAGE 1-A



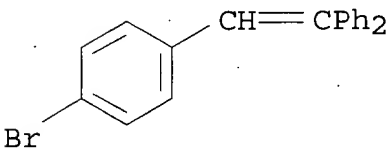
PAGE 1-B



RN 372076-64-7 HCAPLUS
CN Benzene, 1,3-bis(1,1-dimethylethyl)-5-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)

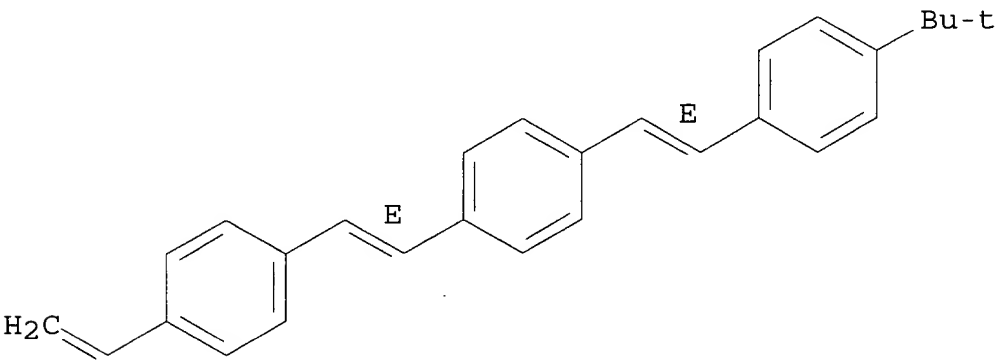


IT **18648-66-3P 183051-53-8P 288105-04-4P**
288105-06-6P 288105-07-7P 338460-78-9P
372076-60-3P 372076-61-4P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)
RN 18648-66-3 HCAPLUS
CN Benzene, 1-bromo-4-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

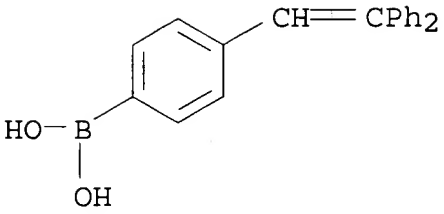


RN 183051-53-8 HCAPLUS
CN Benzene, 1-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]-4-[(1E)-2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)

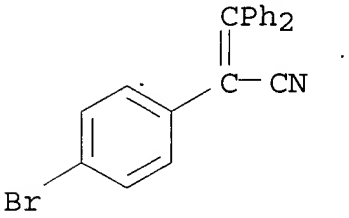
Double bond geometry as shown.



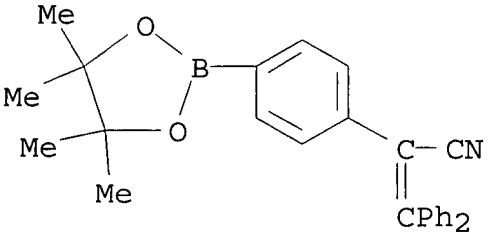
RN 288105-04-4 HCAPLUS
CN Boronic acid, [4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



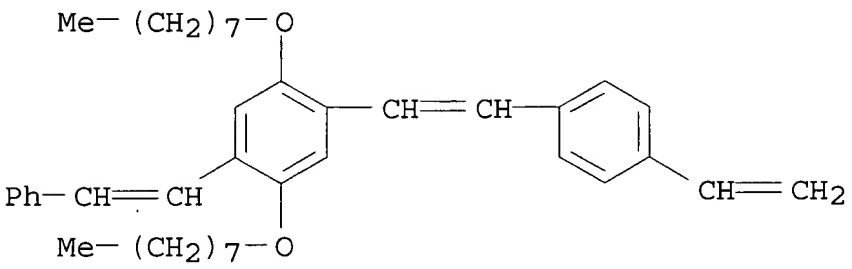
RN 288105-06-6 HCAPLUS
CN Benzeneacetonitrile, 4-bromo-.alpha.-(diphenylmethylene)- (9CI) (CA INDEX NAME)



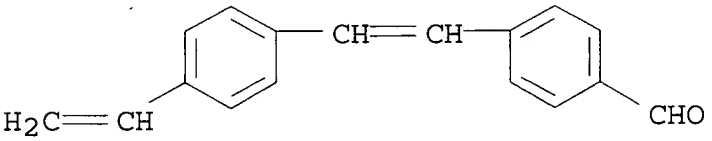
RN 288105-07-7 HCAPLUS
CN Benzeneacetonitrile, .alpha.-(diphenylmethylene)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)- (9CI) (CA INDEX NAME)



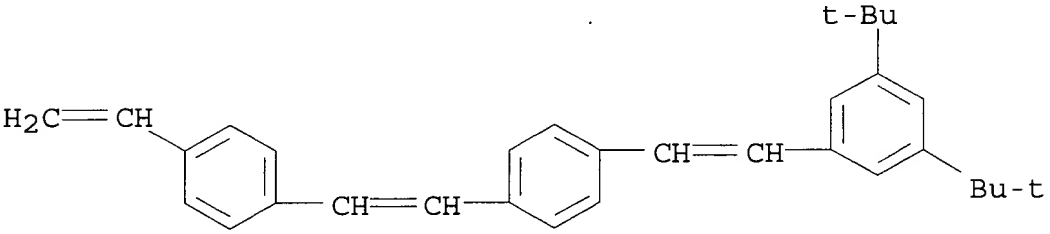
RN 338460-78-9 HCAPLUS
CN Benzene, 1-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)-4-(2-phenylethenyl)- (9CI) (CA INDEX NAME)



RN 372076-60-3 HCAPLUS
CN Benzaldehyde, 4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



RN 372076-61-4 HCAPLUS
CN Benzene, 1-[2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



IC ICM C07C015-50
ICS C07C043-243; H05B033-14
CC 25-2 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 73
ST stilbenoid prepn **optoelectronic** device; **electroluminescence** device styrylstilbenoid prepn; **chromophore electroluminescence** device styrylstilbenoid prepn; photoluminescence styrylstilbenoid **electroluminescence** device; absorption styrylstilbenoid **electroluminescence** device
IT **Electroluminescent** devices
Luminescence
Optical absorption
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)
IT **288104-98-3P 288104-99-4P 288105-00-0P**

288105-01-1P 288105-05-5P 288105-08-8P
288105-10-2P 288105-12-4P 288105-13-5P
288105-15-7P 372076-56-7P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

IT **336195-49-4P 372076-58-9P 372076-59-0P**
372109-52-9P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

IT 100-42-5, reactions **119-61-9**, reactions 591-50-4
1449-46-3 16532-79-9 **18733-98-7**
36393-44-9 38186-51-5 47562-35-6
65413-33-4 73183-34-3 81172-89-6
105309-59-9 134080-67-4 144970-30-9
201338-08-1 219987-82-3 338460-76-7
338460-79-0 372076-62-5 372076-63-6
372076-64-7
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

IT **18648-66-3P 183051-53-8P 288105-04-4P**
288105-06-6P 288105-07-7P 338460-78-9P
372076-60-3P 372076-61-4P
(prepn. of sol. **tetrahedral** compds. for use in **electroluminescent** devices)

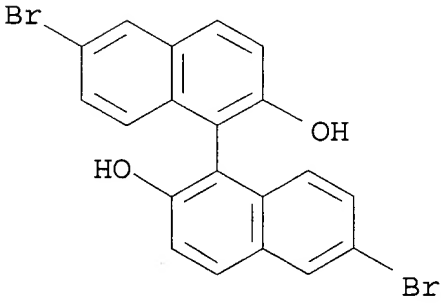
L95 ANSWER 9 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2001:790495 Document No. 136:118174 Glass-forming binaphthyl **chromophores**. Ostrowski, Jacek C.; Hudack, Raymond A., Jr.; Robinson, Matthew R.; Wang, Shujun; Bazan, Guillermo C. (Departments of Chemistry and Materials, University of California, Santa Barbara, CA, 93106, USA). Chemistry--A European Journal, 7(20), 4500-4511 (English) 2001. CODEN: CEUJED. ISSN: 0947-6539. Publisher: Wiley-VCH Verlag GmbH.

AB The use of the binaphthyl framework to synthesize glass-forming org. **chromophores** is described. Suzuki coupling reactions of racemic 6,6'-dibromo-2,2'-dialkoxy-1,1'-binaphthyl with 1,1-diphenyl-2-(4-dihydroxyboronphenyl)-ethene using [Pd(dppf)Cl2] (dppf = 1,1'-bis(diphenylphosphino)ferrocene) as the catalyst provide a set of **chromophores** with the 4-(2,2'-diphenylvinyl)-1-Ph group at the 6- and 6'-positions and a range of groups on the O atom. Starting with enantiomerically enriched (R)-6,6'-dibromo-2,2'-dihexyloxy-1,1'-binaphthyl ((R)-2Hex), one can obtain (R)-3Hex. Heck coupling reactions of 6,6'-dibromo-2,2'-dialkoxy-1,1'-binaphthyl compds. with styrene provide **chromophores** of the type 2,2'-dialkoxy-1,1'-binaphthyl-6,6'-bis(2-phenyl-vinyl). Starting with enantiomerically enriched (R)-2Hex, one obtains (R)-4Hex. Mols. of the type 4 contain two 1-naphthyl-2-Ph ethylene **chromophores** with a pseudoorthogonal relation. Similar procedures can be used to obtain fragments with more extended conjugation length. Thus, the Heck coupling reaction of 2Hex with 4-(4'-tert-butylstyryl)styrene, 1-(4'-tert-butylstyryl)-4-(4'-vinylstyryl)-benzene, and

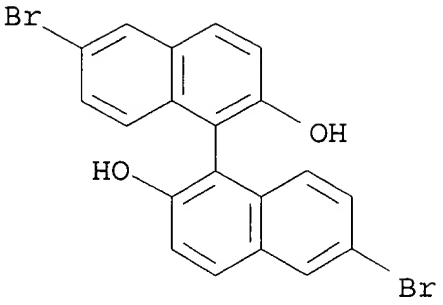
1-(3',5'-dihexyloxystyryl)-4-(4'-vinylstyryl)benzene provides 5Hex, 6Hex, and 7Hex, resp. DSC measurements and powder diffraction expts. indicate that the binaphthol **chromophores** show a resistance to crystn. In some cases, considerably different thermal behavior is obsd. between enantiomerically enriched samples and their racemic counterparts. Increasing the size of the conjugated fragment on the binaphthol core leads to materials with higher glass-transition temps. and a less pronounced tendency to crystallize. Fluorescence spectroscopy gives evidence of excimer-type interactions in the solid state, except for the **chromophores** with 4-(2,2'-diphenylvinyl)-1-Ph groups. It is possible to obtain amorphous films of these **chromophores** directly from soln., and to fabricate **light-emitting** diodes, in which the **electroluminescent** layer corresponds to the binaphthyl **chromophore**.

IT **13185-00-7**, 6,6'-Dibromo-2,2'-dihydroxy-1,1'-binaphthyl
65283-60-5
(alkylation; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

RN 13185-00-7 HCAPLUS
CN [1,1'-Binaphthalene]-2,2'-diol, 6,6'-dibromo- (8CI, 9CI) (CA INDEX NAME)



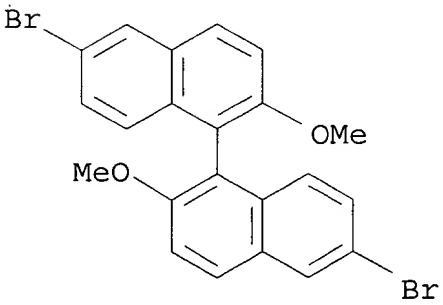
RN 65283-60-5 HCAPLUS
CN [1,1'-Binaphthalene]-2,2'-diol, 6,6'-dibromo-, (1R)- (9CI) (CA INDEX NAME)



IT **74866-27-6 117745-41-2 117745-45-6 138746-87-9 147650-21-3 163959-71-5 201338-08-1 288105-04-4 338460-79-0 389627-19-4 389627-26-3 389867-61-2 389867-63-4 389867-65-6**
(coupling; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

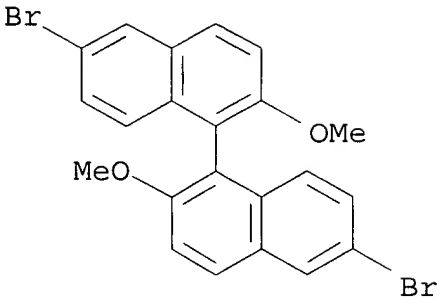
RN 74866-27-6 HCAPLUS

CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dimethoxy- (9CI) (CA INDEX NAME)

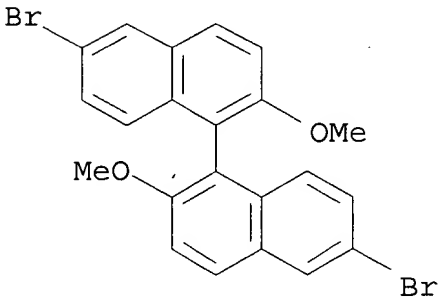


RN 117745-41-2 HCAPLUS

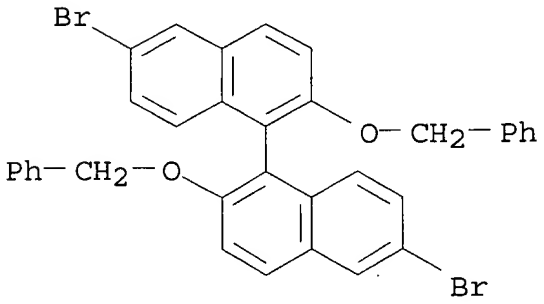
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dimethoxy-, (1S)- (9CI) (CA INDEX NAME)



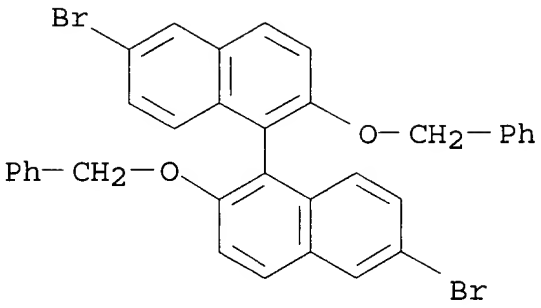
RN 117745-45-6 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dimethoxy-, (1R)- (9CI) (CA INDEX NAME)



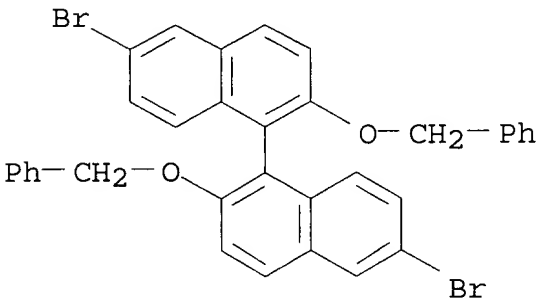
RN 138746-87-9 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(phenylmethoxy)-, (1R)- (9CI) (CA INDEX NAME)



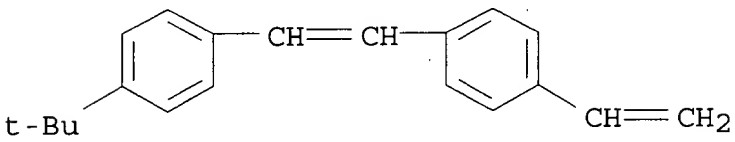
RN 147650-21-3 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



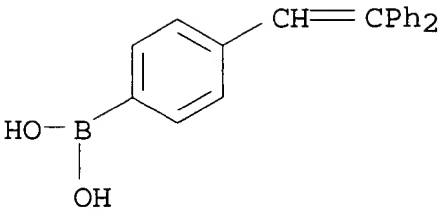
RN 163959-71-5 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(phenylmethoxy)-, (1S)- (9CI) (CA INDEX NAME)



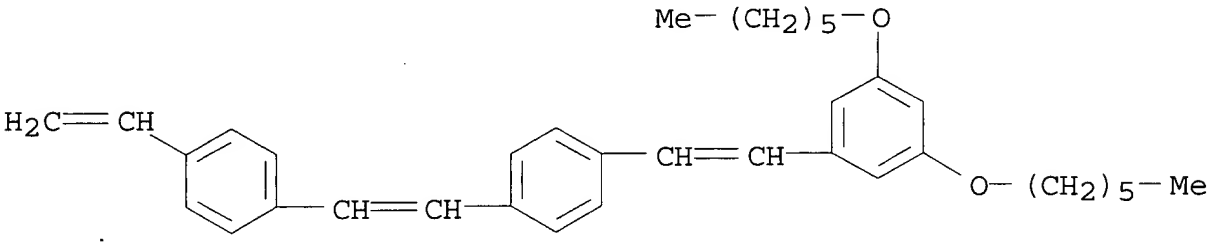
RN 201338-08-1 HCAPLUS
CN Benzene, 1-(1,1-dimethylethyl)-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



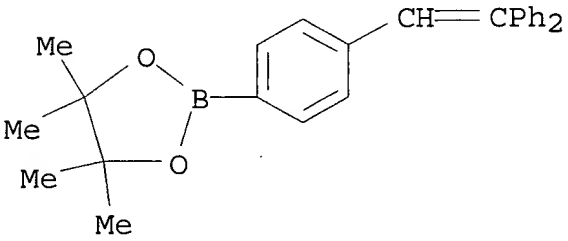
RN 288105-04-4 HCAPLUS
CN Boronic acid, [4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



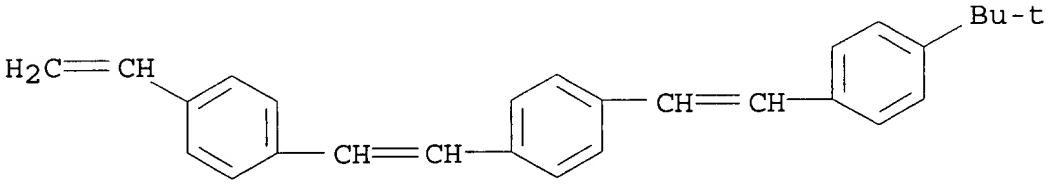
RN 338460-79-0 HCAPLUS
CN Benzene, 1-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



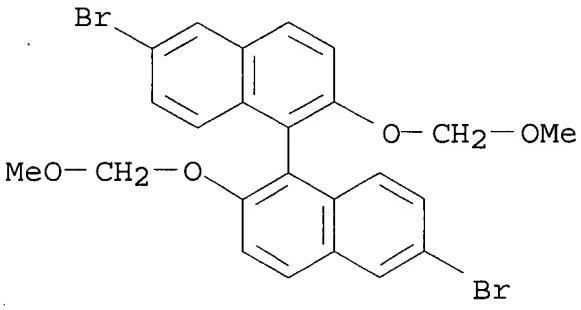
RN 389627-19-4 HCAPLUS
CN 1,3,2-Dioxaborolane, 2-[4-(2,2-diphenylethenyl)phenyl]-4,4,5,5-tetramethyl- (9CI) (CA INDEX NAME)



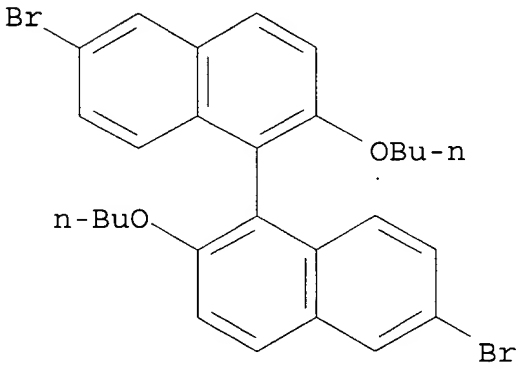
RN 389627-26-3 HCAPLUS
CN Benzene, 1-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



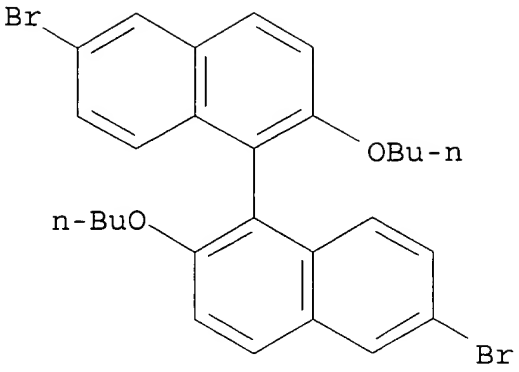
RN 389867-61-2 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(methoxymethoxy)- (9CI) (CA INDEX NAME)



RN 389867-63-4 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dibutoxy-, (1R)- (9CI) (CA INDEX NAME)



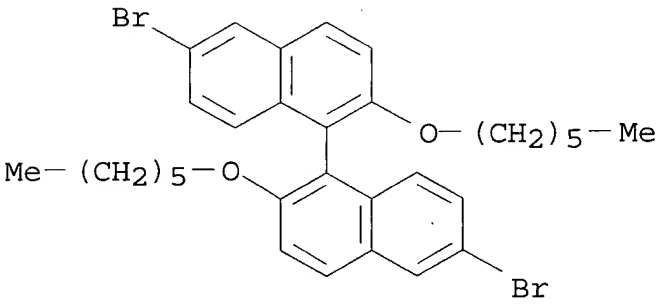
RN 389867-65-6 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dibutoxy-, (1S)- (9CI) (CA INDEX NAME)



IT **172333-48-1P 191787-87-8P 256388-15-5P**
(coupling; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

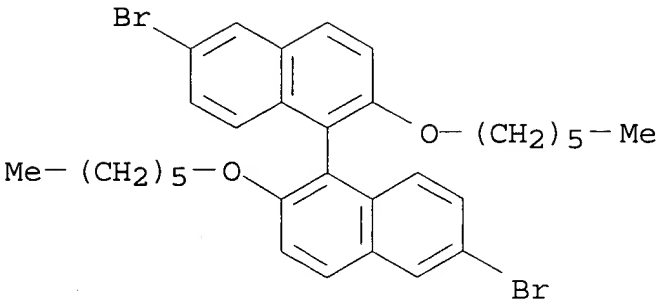
RN 172333-48-1 HCAPLUS

CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(hexyloxy)-, (1R)- (9CI) (CA INDEX NAME)

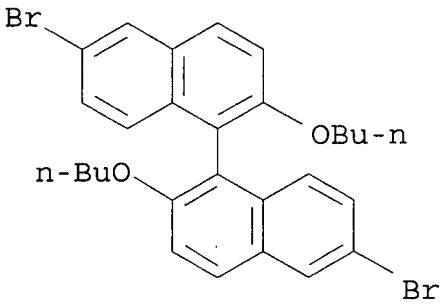


RN 191787-87-8 HCAPLUS

CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(hexyloxy)- (9CI) (CA INDEX NAME)



RN 256388-15-5 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dibutoxy- (9CI) (CA INDEX NAME)



IT **389627-24-1P**
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)
RN 389627-24-1 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[2-[4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]-2,2'-bis(hexyloxy)- (9CI) (CA INDEX NAME)

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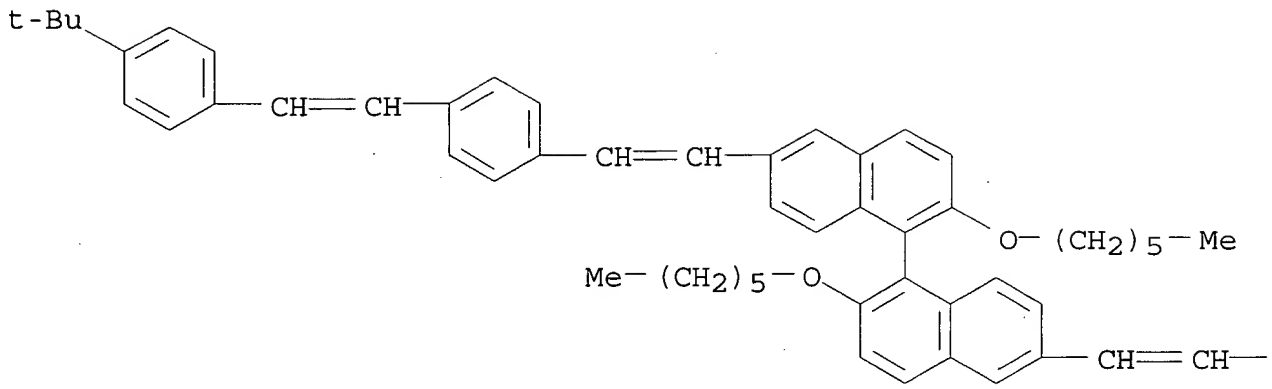

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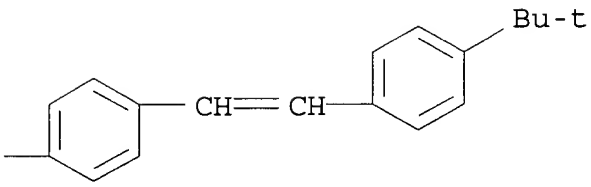
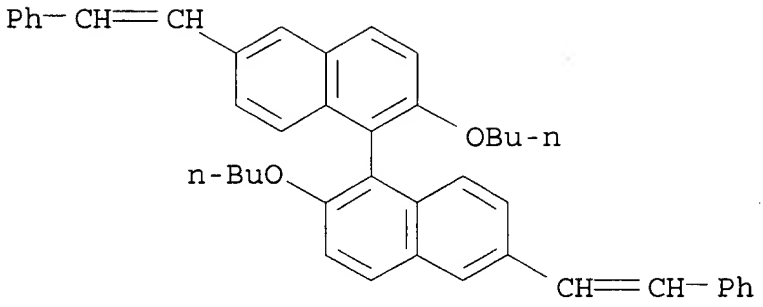


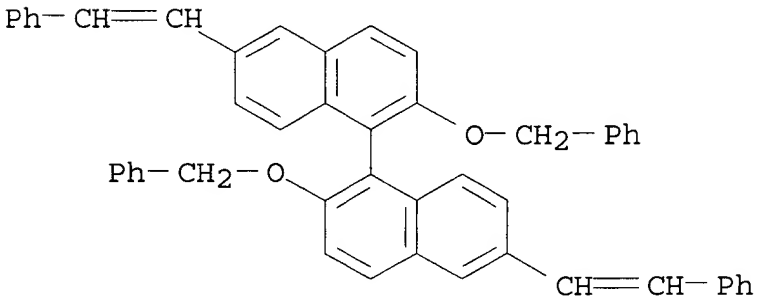
IT **389627-33-2 389627-34-3 389867-73-6**
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

RN 389627-33-2 HCAPLUS

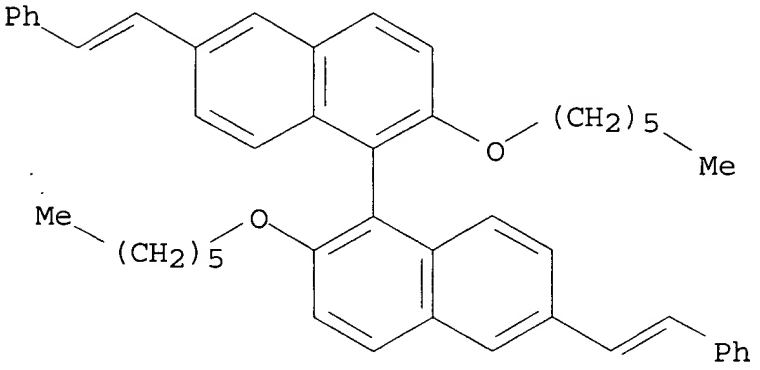
CN 1,1'-Binaphthalene, 2,2'-dibutoxy-6,6'-bis(2-phenylethenyl)- (9CI) (CA INDEX NAME)



RN 389627-34-3 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis(2-phenylethenyl)-2,2'-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



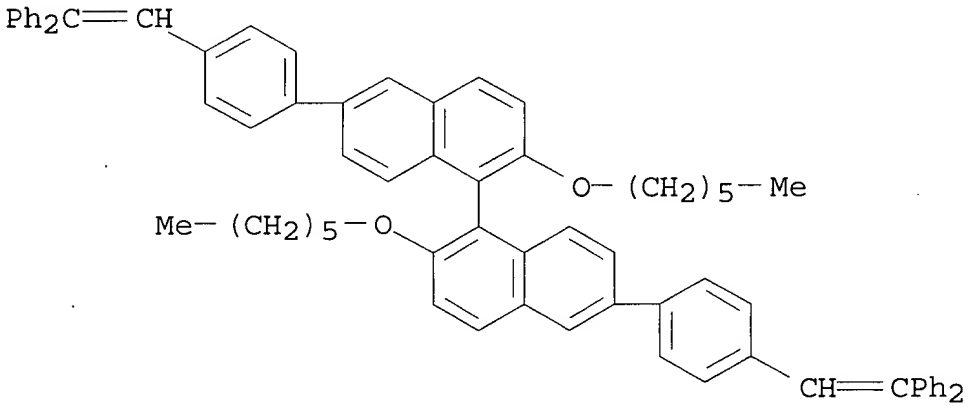
RN 389867-73-6 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-bis(hexyloxy)-6,6'-bis(2-phenylethenyl)-, (1S)- (9CI) (CA INDEX NAME)



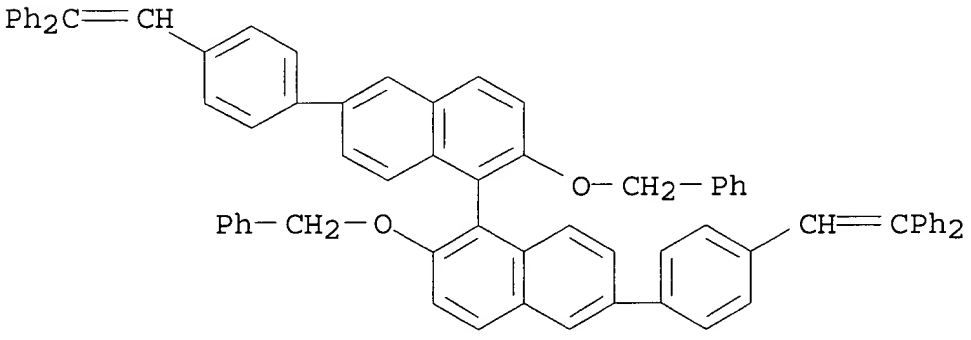
IT **389627-14-9P 389627-15-0P 389627-16-1P**
389627-17-2P 389627-18-3P 389627-21-8P
389627-22-9P 389627-29-6P 389627-31-0P

389867-60-1P 389867-62-3P 389867-64-5P
389867-66-7P 389867-67-8P 389867-68-9P
389867-70-3P 389867-71-4P 389867-72-5P
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

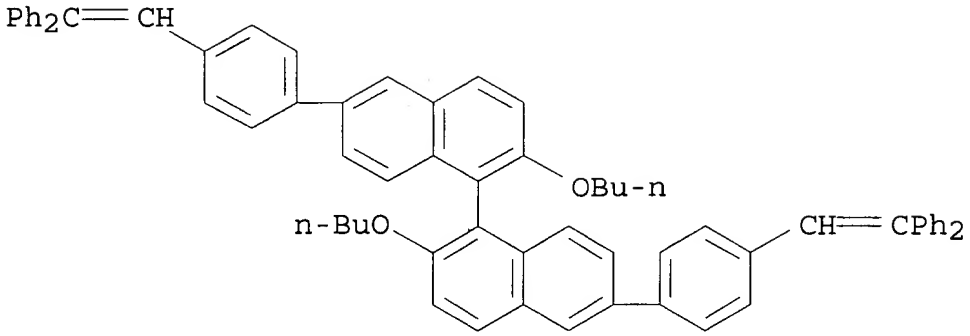
RN 389627-14-9 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[4-(2,2-diphenylethenyl)phenyl]-2,2'-bis(hexyloxy)- (9CI) (CA INDEX NAME)



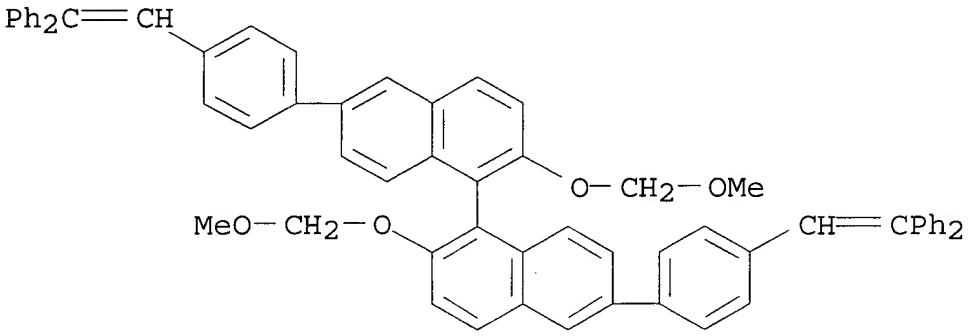
RN 389627-15-0 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[4-(2,2-diphenylethenyl)phenyl]-2,2'-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



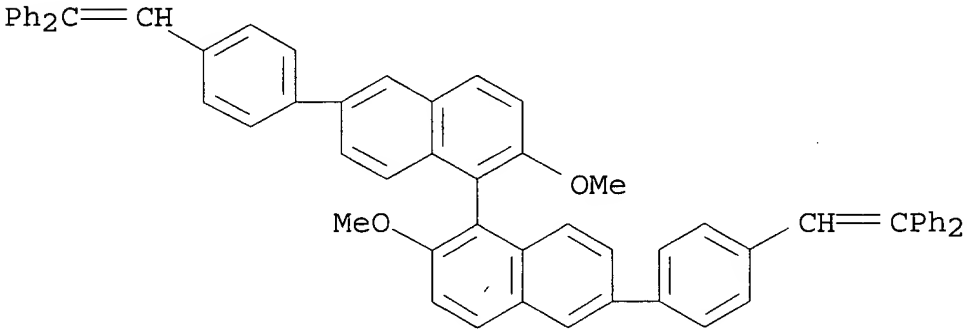
RN 389627-16-1 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dibutoxy-6,6'-bis[4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 389627-17-2 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[4-(2,2-diphenylethenyl)phenyl]-2,2'-bis(methoxymethoxy)- (9CI) (CA INDEX NAME)

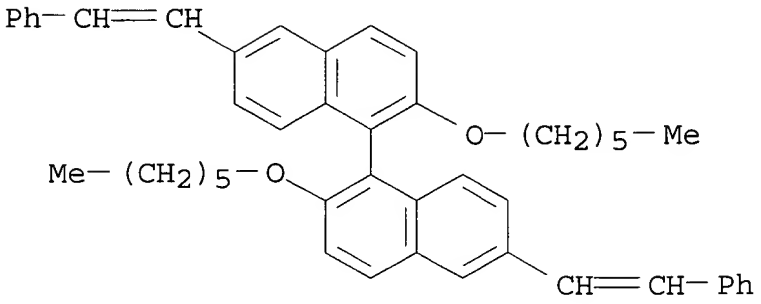


RN 389627-18-3 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[4-(2,2-diphenylethenyl)phenyl]-2,2'-dimethoxy- (9CI) (CA INDEX NAME)

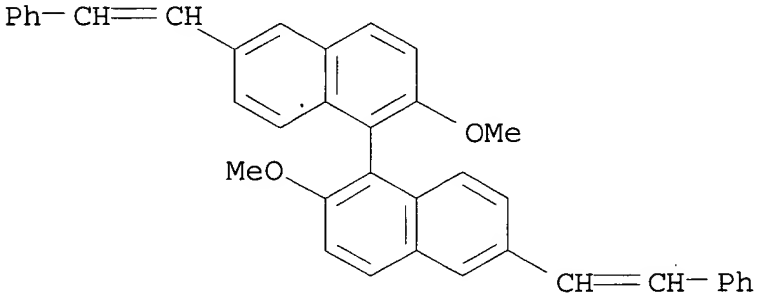


RN 389627-21-8 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-bis(hexyloxy)-6,6'-bis(2-phenylethenyl)-

(9CI) (CA INDEX NAME)



RN 389627-22-9 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dimethoxy-6,6'-bis(2-phenylethenyl)- (9CI) (CA INDEX NAME)



RN 389627-29-6 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[2-[4-[2-[4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]-2,2'-bis(hexyloxy)- (9CI) (CA INDEX NAME)

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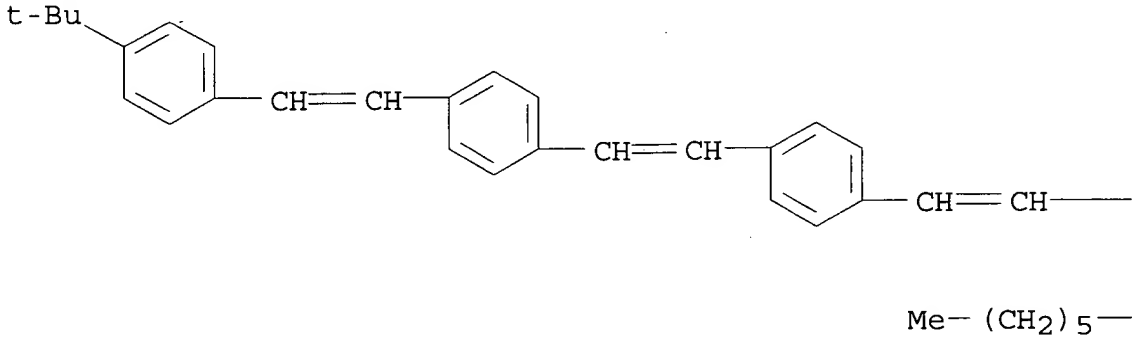

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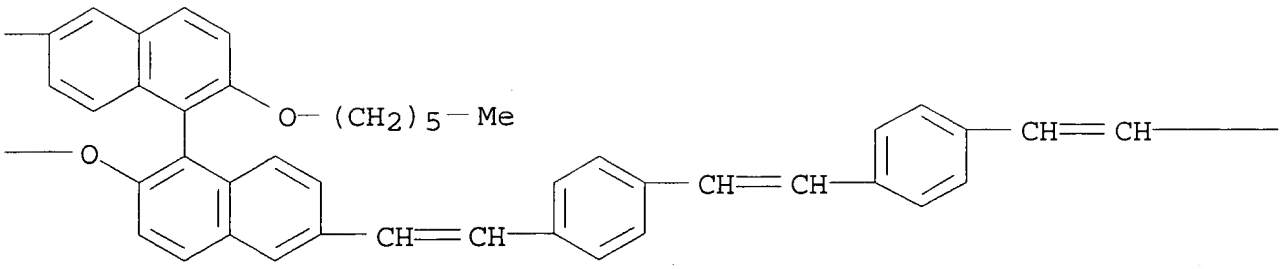

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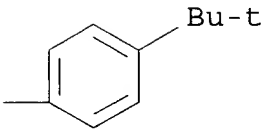

RN 389627-31-0 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[2-[4-[2-[4-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]-2,2'-bis(hexyloxy)- (9CI) (CA INDEX NAME)

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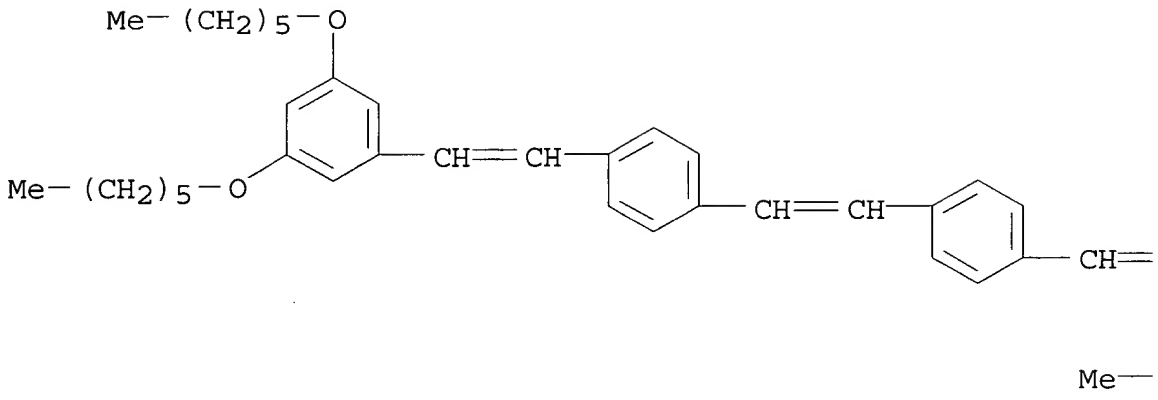

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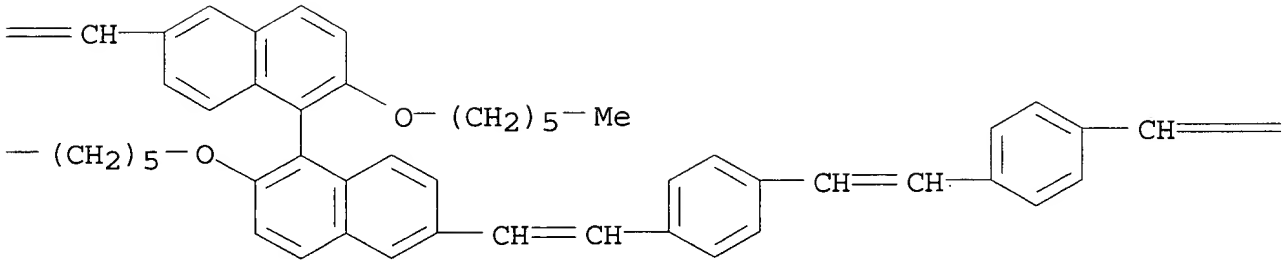

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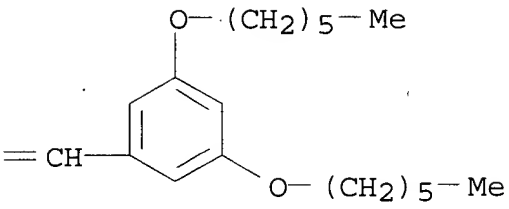
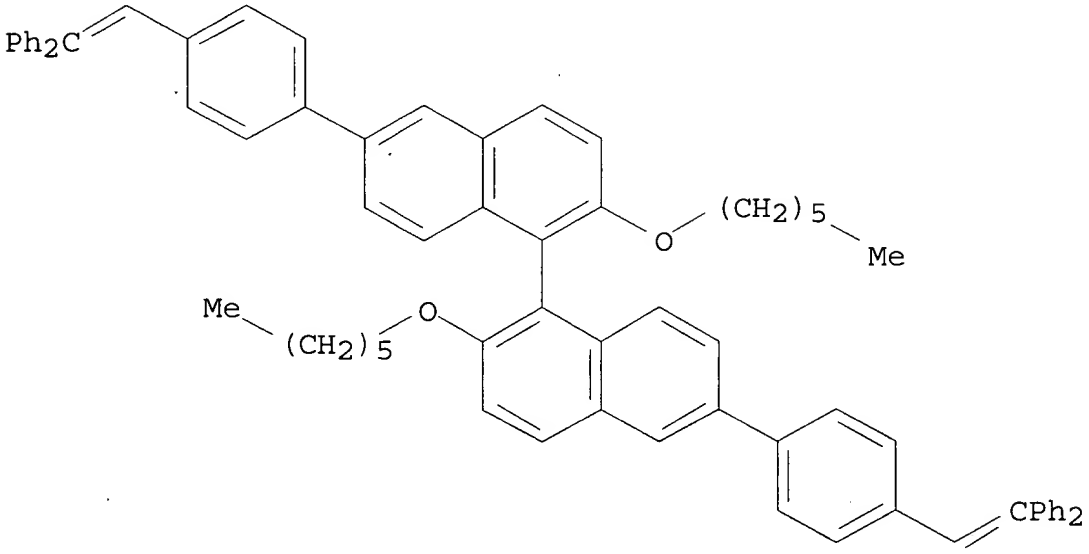
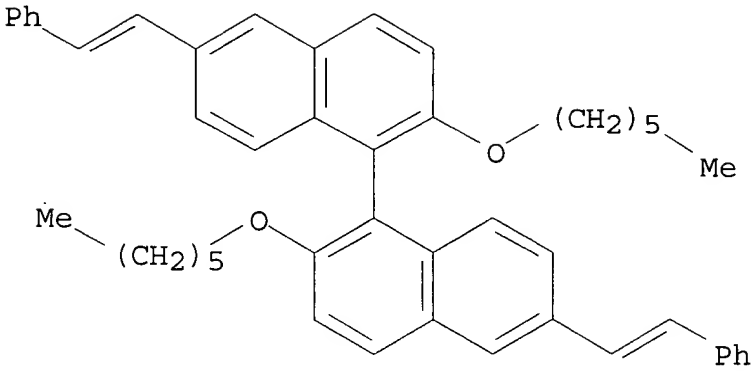


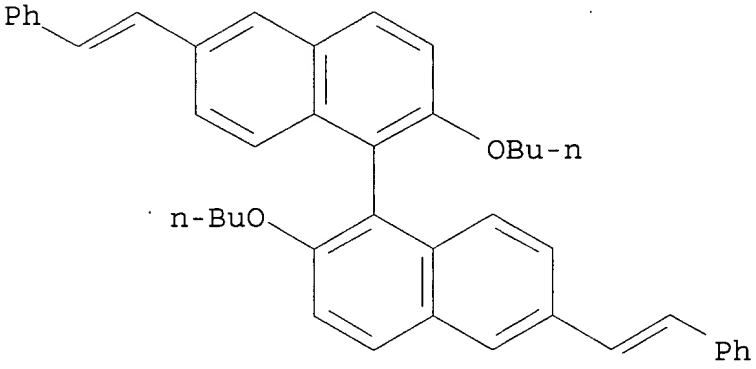
RN 389867-60-1 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[4-(2,2-diphenylethenyl)phenyl]-2,2'-bis(hexyloxy)-, (1R)- (9CI) (CA INDEX NAME)



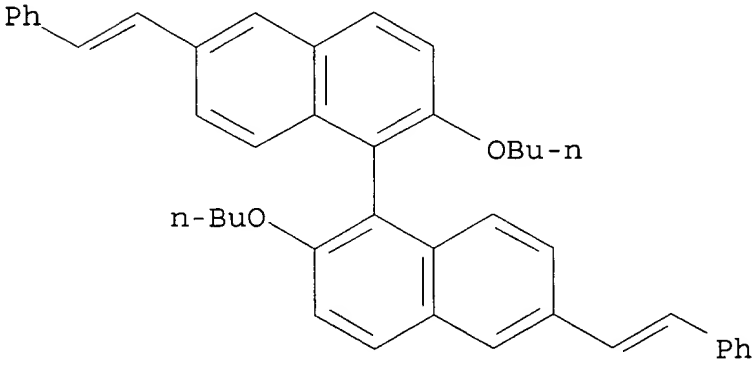
RN 389867-62-3 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-bis(hexyloxy)-6,6'-bis(2-phenylethenyl)-, (1R)- (9CI) (CA INDEX NAME)



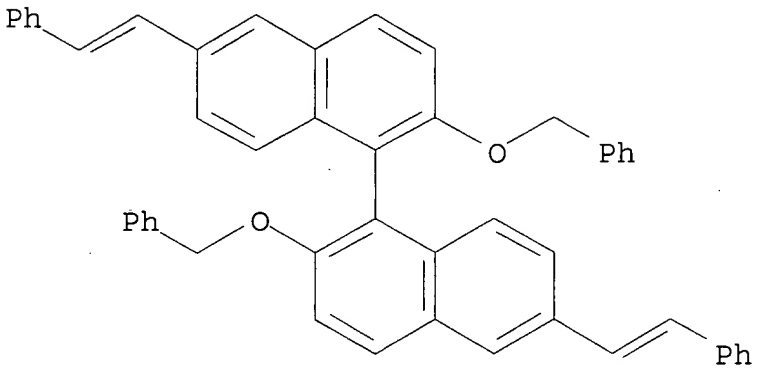
RN 389867-64-5 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dibutoxy-6,6'-bis(2-phenylethenyl)-, (1R)-
(9CI) (CA INDEX NAME)



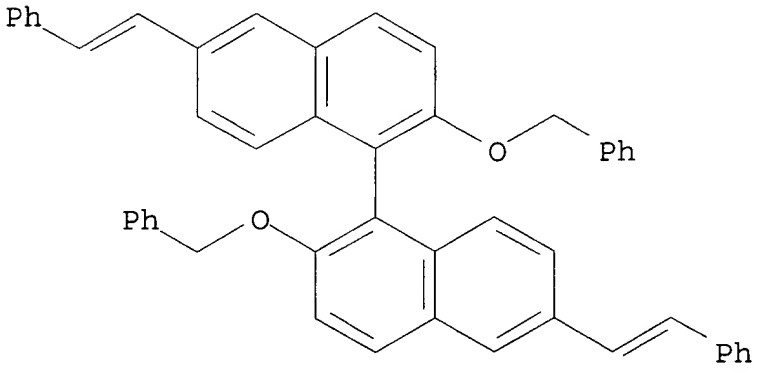
RN 389867-66-7 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dibutoxy-6,6'-bis(2-phenylethenyl)-, (1S)-
(9CI) (CA INDEX NAME)



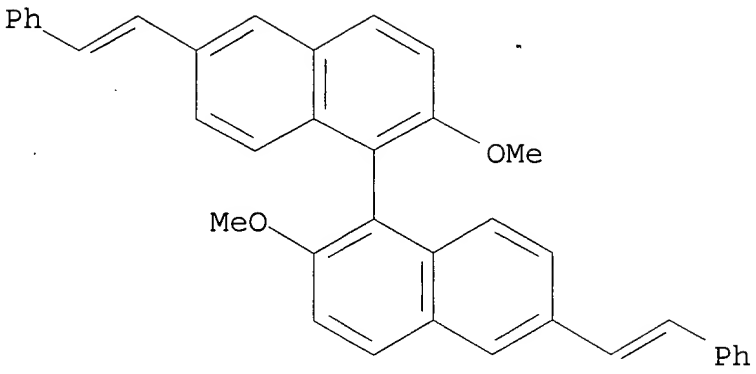
RN 389867-67-8 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis(2-phenylethenyl)-2,2'-bis(phenylmethoxy)-, (1R)- (9CI) (CA INDEX NAME)



RN 389867-68-9 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis(2-phenylethenyl)-2,2'-bis(phenylmethoxy)-, (1S)- (9CI) (CA INDEX NAME)



RN 389867-70-3 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dimethoxy-6,6'-bis(2-phenylethenyl)-, (1S)- (9CI) (CA INDEX NAME)



RN 389867-71-4 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[2-[4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]-2,2'-bis(hexyloxy)-, (1R)- (9CI) (CA INDEX NAME)

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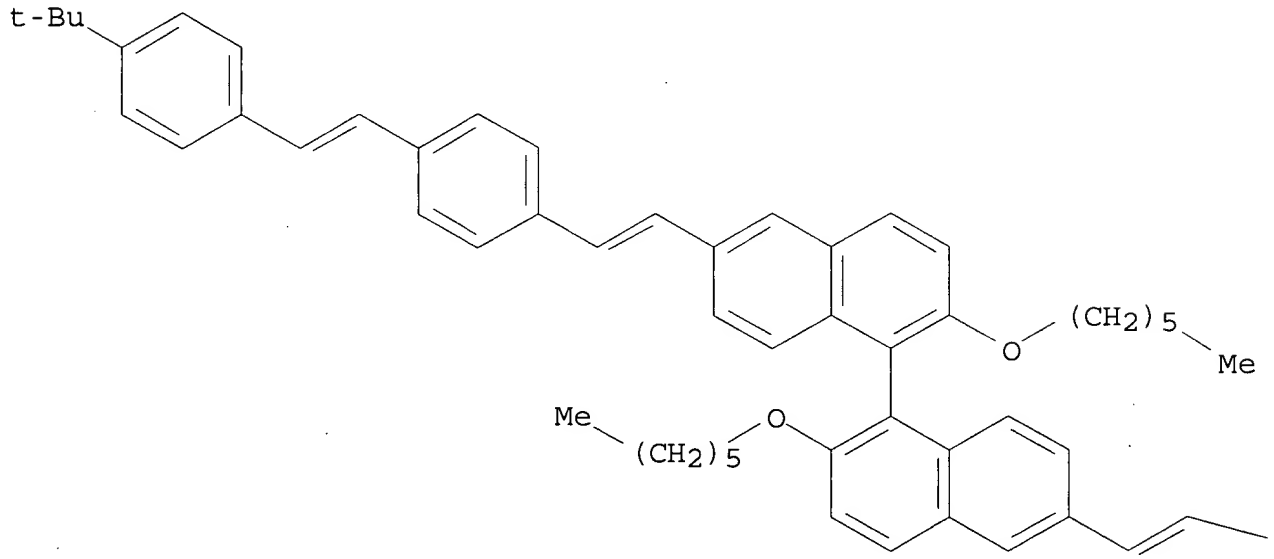

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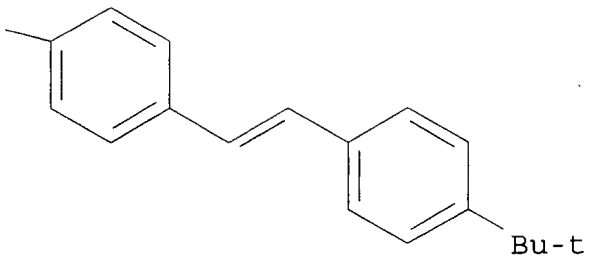

RN 389867-72-5 HCAPLUS
CN 1,1'-Binaphthalene, 6,6'-bis[2-[4-[2-[4-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]-2,2'-bis(hexyloxy)-, (1R)- (9CI) (CA INDEX NAME)

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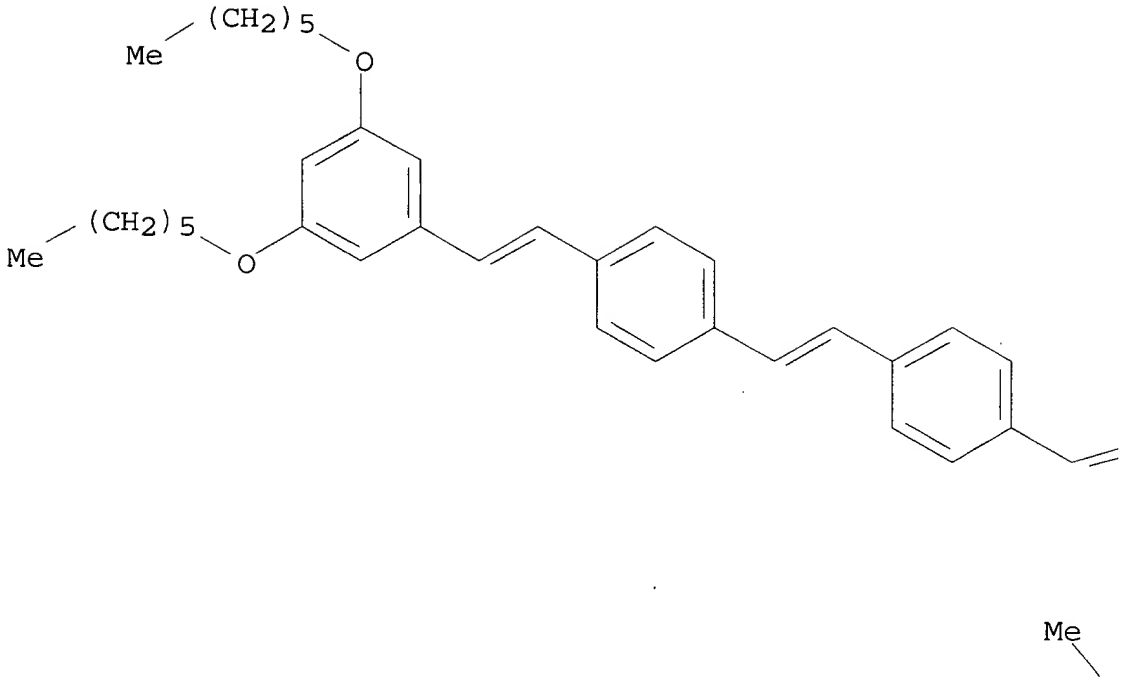

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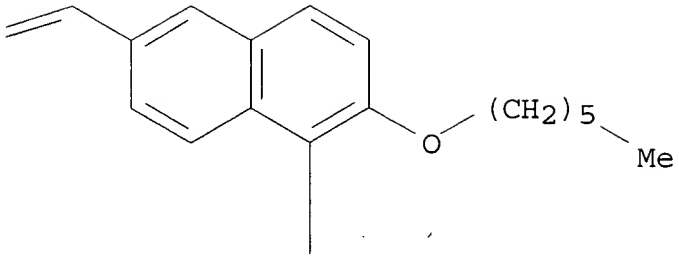

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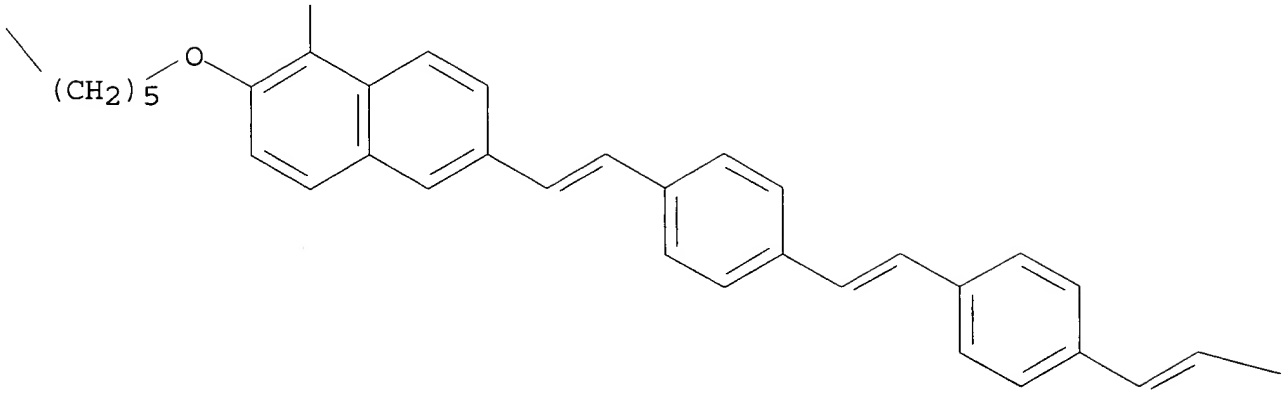

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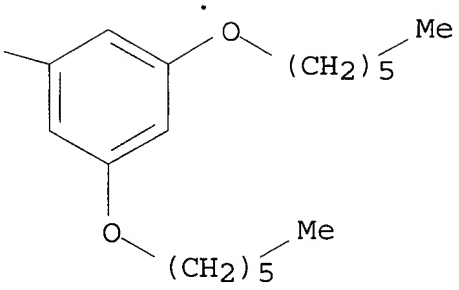
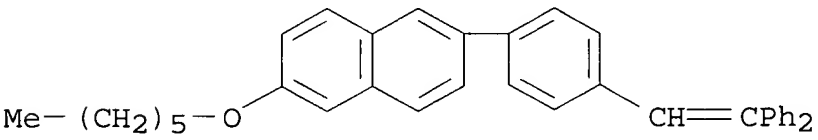
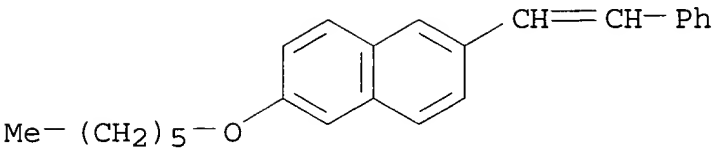


IT **389627-20-7P 389627-23-0P 389627-25-2P**
389627-32-1P
(ref.; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

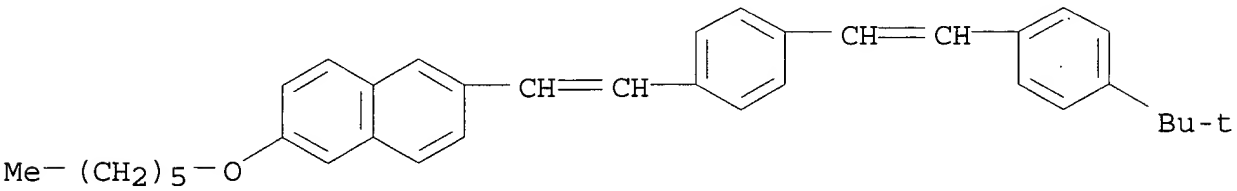
RN 389627-20-7 HCAPLUS
CN Naphthalene, 2-[4-(2,2-diphenylethenyl)phenyl]-6-(hexyloxy)- (9CI) (CA INDEX NAME)



RN 389627-23-0 HCAPLUS
CN Naphthalene, 2-(hexyloxy)-6-(2-phenylethenyl)- (9CI) (CA INDEX NAME)



RN 389627-25-2 HCAPLUS
CN Naphthalene, 2-[2-[4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]-6-(hexyloxy)- (9CI) (CA INDEX NAME)



RN 389627-32-1 HCAPLUS
CN Naphthalene, 2-[2-[4-[2-[4-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]-6-(hexyloxy)- (9CI) (CA INDEX NAME)

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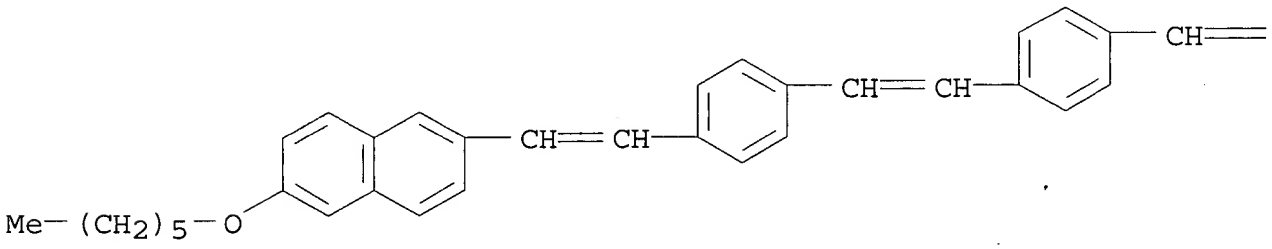

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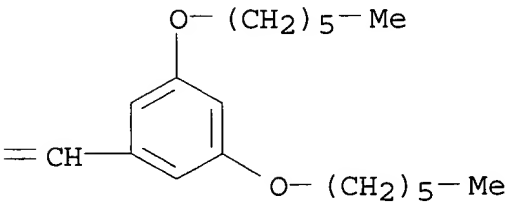
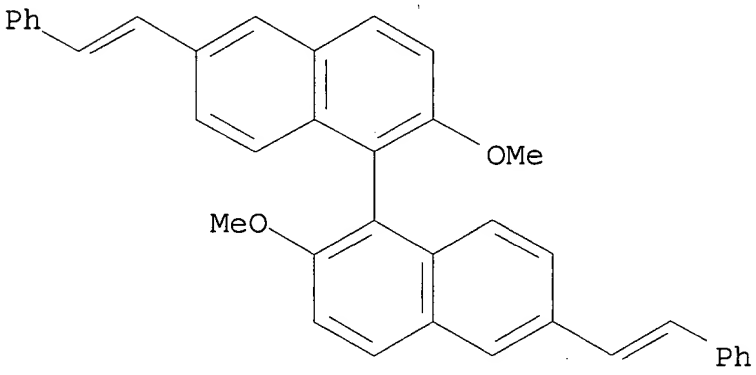


IT **389867-69-0P**
(thermal racemization; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)
RN 389867-69-0 HCAPLUS
CN 1,1'-Binaphthalene, 2,2'-dimethoxy-6,6'-bis(2-phenylethenyl)-, (1R)-(9CI) (CA INDEX NAME)



CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 65, 73
ST glass binaphthyl **chromophore** fluorescence **electroluminescence**
IT Arylation
(Heck; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)
IT Amorphous materials
Chromophores
Crystallization
Differential scanning calorimetry
Electroluminescent devices
Fluorescence
Glass transition temperature
Melting point
Suzuki coupling reaction
UV and visible spectra
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)
IT Racemization
(thermal; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT 109-65-9, 1-Bromobutane 111-25-1, 1-Bromohexane **13185-00-7**, 6,6'-Dibromo-2,2'-dihydroxy-1,1'-binaphthyl 15231-91-1, 6-Bromo-2-naphthol **65283-60-5**
(alkylation; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT 100-42-5, Styrene, reactions **74866-27-6** **117745-41-2** **117745-45-6** **138746-87-9** **147650-21-3** **163959-71-5** **201338-08-1** **288105-04-4** **338460-79-0** **389627-19-4** **389627-26-3** **389867-61-2** **389867-63-4** **389867-65-6**
(coupling; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT 66217-21-8P **172333-48-1P** **191787-87-8P** **256388-15-5P**
(coupling; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT 126213-51-2, Poly(ethylenedioxythiophene)
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT **389627-24-1P**
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT **389627-33-2** **389627-34-3** **389867-73-6**
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT **389627-14-9P** **389627-15-0P** **389627-16-1P** **389627-17-2P** **389627-18-3P** **389627-21-8P** **389627-22-9P** **389627-29-6P** **389627-31-0P** **389867-60-1P** **389867-62-3P** **389867-64-5P** **389867-66-7P** **389867-67-8P** **389867-68-9P** **389867-70-3P** **389867-71-4P** **389867-72-5P**
(prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT **389627-20-7P** **389627-23-0P** **389627-25-2P** **389627-32-1P**
(ref.; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting**

diodes contg. **electroluminescent** binaphthyl **chromophores**)

IT **389867-69-0P**
(thermal racemization; prepn., glass transition temp., fluorescence and UV/vis spectra, and fabrication of **light-emitting** diodes contg. **electroluminescent** binaphthyl **chromophores**)

L95 ANSWER 10 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2001:629069 Document No. 135:344852 Synthesis and optical properties of novel blue **light-emitting** polymers with electron affinitive oxadiazole. Sun, Y.-M. (Department of Industrial Safety and Hygiene, Chung Hwai College of Medical Technology, Jen-Te Hsiang, Tainan Hasien, Taiwan). Polymer, 42(23), 9495-9504 (English) 2001. CODEN: POLMAG. ISSN: 0032-3861. Publisher: Elsevier Science Ltd..

AB A series of novel polyethers, which can be used as a blue **electroluminescent** material were prepd. from two diarylethylene-contg. emission **chromophores** with two oxadiazole-contg. **electron-transporting** **chromophores**. The characterization and effect of different structures on **optoelect**. properties was investigated by use of thermal anal. and spectroscopy (IR, UV-visible, photoluminescence, cyclic voltammetry) measurement.2,5-Bis-(4-fluoroaryl)-1,3,4-oxadiazole and 4,4'-dihydroxyarylethylene were used as **electron transport** and emission monomers, resp. The 4,4'-dihydroxyarylethylene derivs. that contain benzene-benzene and benzene-naphthalene were synthesized by Horner-Wadsworth-Emmons olefination reaction. The emission **chromophores emit** blue **light** as expected. Arom. polyethers were obtained by nucleophilic substitution reaction of oxadiazole-activated bis(halide) monomers with bis(phenol) monomers. Moreover, two polymers contg. hexaethylene chain instead of **electron transport** unit were also synthesized for comparison. All the resulting polymers contg. oxadiazole group were thermally stable below 470.degree.C. The absorption peaks of these polymers varied from 310 to 370 nm, while the photoluminescent peaks varied from 377 to 456 nm. These polymers contg. **electron-transporting** oxadiazole indeed show extra redn. potentials in CV measurements.

IT **371172-84-8P**
(blue **light-emitting** polymers with electron affinitive oxadiazole)

RN 371172-84-8 HCAPLUS

CN Poly(1,3,4-oxadiazole-2,5-diyl-1,4-naphthalenediyloxy-1,4-phenylene-1,2-ethenediyl-1,4-phenyleneoxy-1,4-naphthalenediyl) (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *
CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 76
ST diarylethylene oxadiazole LED **chromophore** thermal stability photoluminescence cyclic voltammetry
IT UV absorption
(UV-visible; blue **light-emitting** polymers with electron affinitive oxadiazole)
IT Cyclic voltammetry
Electroluminescent devices
Luminescence
Luminescence, **electroluminescence**
Redox potential
Thermal stability
(blue **light-emitting** polymers with electron affinitive oxadiazole)
IT Polymers, preparation
(conjugated; blue **light-emitting** polymers with electron affinitive oxadiazole)
IT Solubility
(org.solvents; blue **light-emitting** polymers with electron affinitive oxadiazole)
IT Polyoxadiazoles
(polyether-, arom.; blue **light-emitting** polymers with electron affinitive oxadiazole)
IT Polyethers, preparation
(polyoxadiazole-, arom.; blue **light-emitting** polymers with electron affinitive oxadiazole)
IT 872-50-4, N-Methyl-2-pyrrolidone, uses 6837-24-7, N-Cyclohexyl-2-pyrrolidone
(blue **light-emitting** polymers with electron affinitive oxadiazole)
IT 659-22-3P 269398-57-4P
(blue **light-emitting** polymers with electron affinitive oxadiazole)
IT 286364-86-1P 371172-78-0P 371172-79-1P 371172-80-4P
371172-81-5P 371172-82-6P 371172-83-7P **371172-84-8P**
371172-85-9P
(blue **light-emitting** polymers with electron affinitive oxadiazole)
IT 123-11-5, 4-Methoxybenzaldehyde, reactions 1145-93-3, Diethyl-4-methoxybenzylphosphonate 15971-29-6, 4-Methoxy-1-naphthaldehyde
(blue **light-emitting** polymers with electron affinitive oxadiazole)
IT 324-81-2P, 2,5-Bis(4-fluorophenyl)-1,3,4-oxadiazole 4705-34-4P, 1-(1'-Methoxy-4'-phenylvinyl)-4-methoxybenzene 148140-89-0P, 2,5-Bis(4-fluoronaphthyl)-1,3,4-oxadiazole 269398-54-1P, 1-(1'-Methoxy-4'-naphthylvinyl)-4-methoxybenzene

(blue **light-emitting** polymers with electron affinitive oxadiazole)

L95 ANSWER 11 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2001:417483 Document No. 135:129803 Crystal Structures of Tetrakis(4,4'-(2,2-diphenylvinyl)-1,1'-biphenyl)methane: **Transmission Electron** Microscopy and X-ray Diffraction. Yang, C. Y.; Wang, Shujun; Robinson, Mathew R.; Bazan, Guillermo C.; Heeger, Alan J. (Institute of Polymers and Organic Solids Department of Chemistry Materials Department and Department of Physics, University of California, Santa Barbara, CA, 93106, USA). Chemistry of Materials, 13(7), 2342-2348 (English) 2001. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

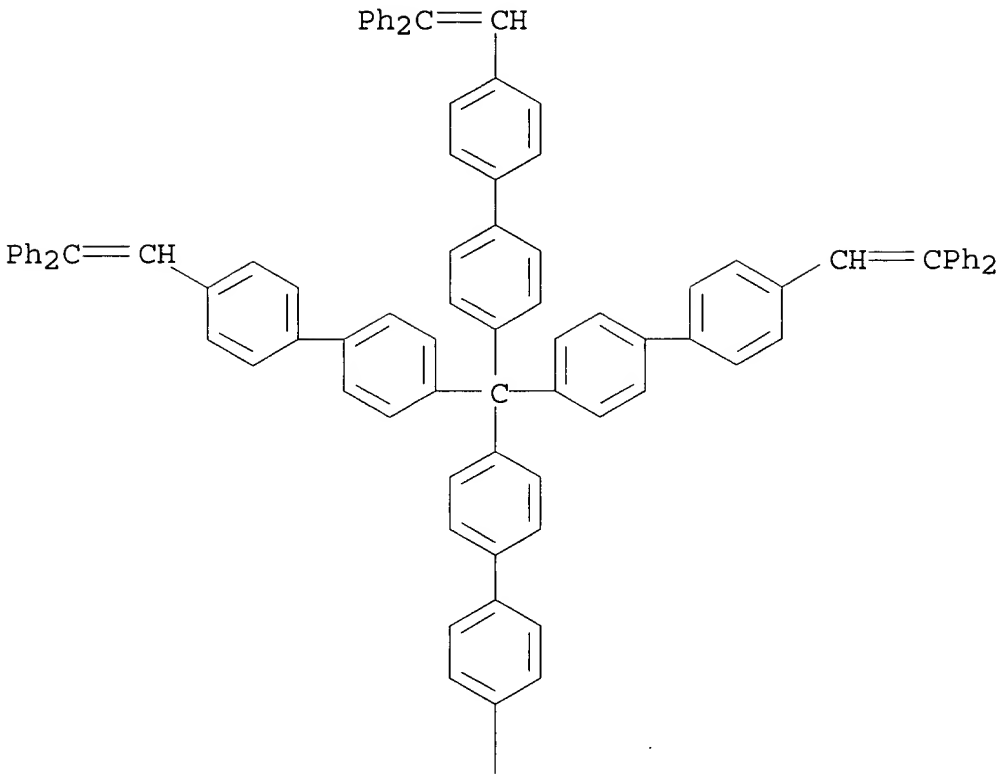
AB The crystal structures of tiny crystallites (micron to submicron in size) of tetrakis(4,4'-(2,2-diphenylvinyl)-1,1'-biphenyl)methane (C(DPVBi)4) were studied by using a combination of TEM and x-ray powder diffraction techniques. The crystal structure of as-synthesized C(DPVBi)4 is hexagonal. The lattice parameters are a 2.068 and c 2.194 nm with possible space group P.hivin.6. After C(DPVBi)4 was annealed up to 280.degree., the crystal structure converted to a different hexagonal structure with lattice parameters: a 2.102 and c 3.370 nm. The possible space group is P6/m. The two hexagonal structures correspond to different packing of the individual mols., which may result in different bulk **optical** and **electronic** properties.

IT **288105-05-5**
(crystal structure and phase transition of)

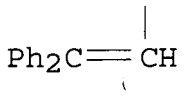
RN 288105-05-5 HCAPLUS

CN 1,1'-Biphenyl, 4,4'',4'''',4''''''-methanetetrayltetrakis[4'-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25
IT **288105-05-5**
(crystal structure and phase transition of)

L95 ANSWER 12 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2001:320433 Document No. 135:77439 Oxadiazole Containing Conjugated-Nonconjugated Blue and Blue-Green **Light Emitting** Copolymers. Zheng, Min; Ding, Liming; Guerel, E. Elif; Lahti, Paul M.; Karasz, Frank E. (Department of Polymer Science & Engineering and Department of Chemistry, University of Massachusetts, Amherst, MA, 01003, USA). Macromolecules, 34(12), 4124-4129 (English) 2001. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

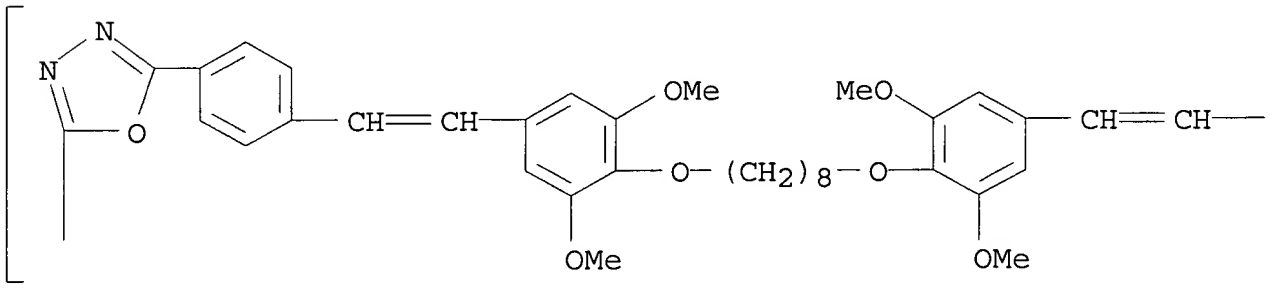
AB A series of segmented copolymers contg. oxadiazole groups in the conjugated main chain have been synthesized with the objective of raising the **electron transport** ability. The present copolymers consist of alternating blocks of rigid **chromophores** contg. oxadiazole units together with flexible spacer segments. The effects of **chromophore** substituents on the optical properties of the copolymers were investigated. Strong solvatochromic effects were obsd., indicating intramol. charge transfer in the excited states. The copolymers not only were used as blue-green **electroluminescent** materials but also were effective as **electron transport/ hole** blocking layers in polymer **light emitting** diode architectures as a result of the introduction of **electron transporting** unit oxadiazole. The quantum efficiency of a single-layer device using PPV (polyphenylenevinylene) was greatly enhanced with the use of a thin film of the oxadiazole copolymer serving as an ETL (**electron transporting** layer). At 6.8 V, a brightness of 2400 cd/m2 was achieved with an external quantum efficiency of 0.094%.

IT **347895-40-3P 347895-42-5P 347895-44-7P**
(prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

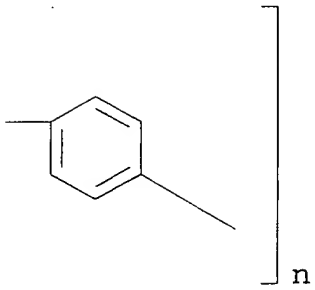
RN 347895-40-3 HCAPLUS

CN Poly[1,3,4-oxadiazole-2,5-diyl-1,4-phenylene-1,2-ethenediyl(3,5-dimethoxy-1,4-phenylene)oxy-1,8-octanediyloxy(2,6-dimethoxy-1,4-phenylene)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

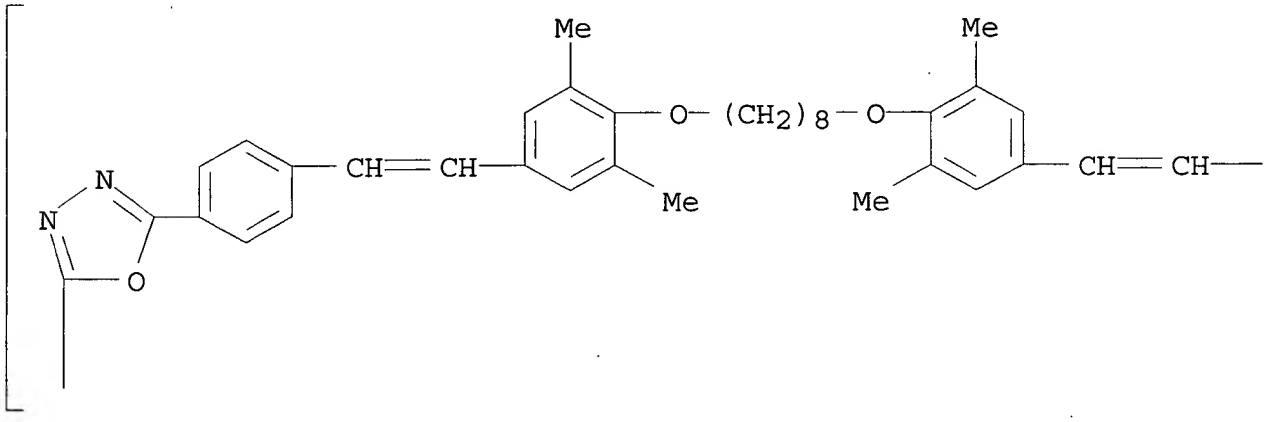


PAGE 1-B

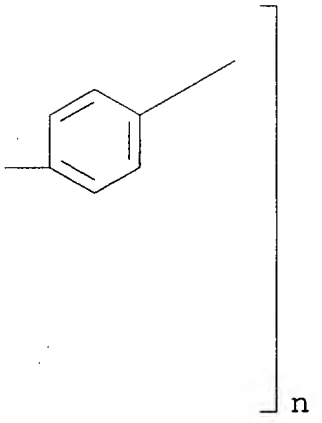


RN 347895-42-5 HCAPLUS
CN Poly[1,3,4-oxadiazole-2,5-diyl-1,4-phenylene-1,2-ethenediyl(3,5-dimethyl-1,4-phenylene)oxy-1,8-octanediyloxy(2,6-dimethyl-1,4-phenylene)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

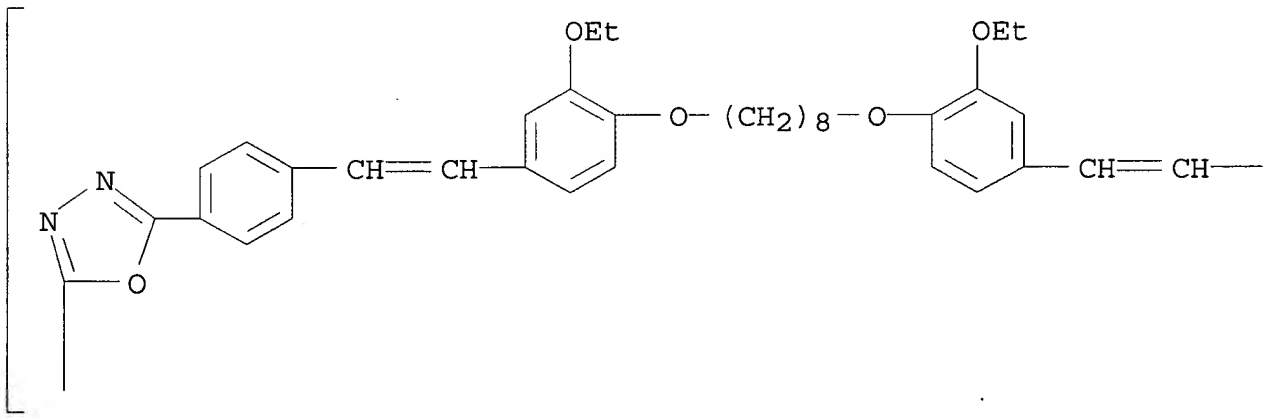


PAGE 1-B

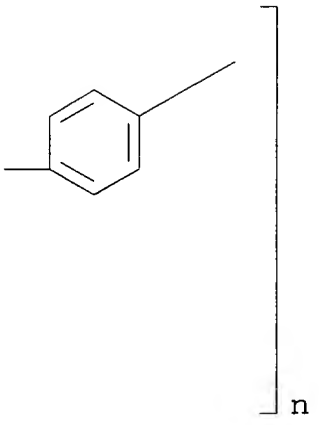


RN 347895-44-7 HCAPLUS
CN Poly[1,3,4-oxadiazole-2,5-diyl-1,4-phenylene-1,2-ethenediyl(3-ethoxy-1,4-phenylene)oxy-1,8-octanediyloxy(2-ethoxy-1,4-phenylene)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 73

ST oxadiazole **chromophore** conjugated copolymer optical property; charge transfer oxadiazole **chromophore** conjugated copolymer

IT Phosphors
(**electroluminescent**; prepn. and **optical** properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Solvent effect
(on optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Polyoxadiazoles
(poly(arylenealkenylene)-, polyether-; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Polyoxadiazoles
(polyether-, poly(arylenealkenylene)-; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Polyethers, properties
(polyoxadiazole-, poly(arylenealkenylene)-; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Poly(arylenealkenylenes)
(polyoxadiazole-, polyether-; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light emitting** copolymers)

IT Brightening
Fluorescence
Glass transition temperature
Luminescence
Luminescence, **electroluminescence**

Molecular weight
Optical properties
Photoinduced **electron transfer**
Polymerization
(prepn. and **optical** properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

IT 221615-56-1P
(intermediate; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

IT 297155-61-4P 297155-64-7P
(monomer; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

IT 347895-37-8P 347895-38-9P 347895-39-0P **347895-40-3P** **347895-42-5P** **347895-44-7P**
(prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

IT 67-66-3, Chloroform, uses 75-05-8, Acetonitrile, uses 108-88-3, Toluene, uses 110-82-7, Cyclohexane, uses
(solvent effect on optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

IT 121-32-4, 3-Ethoxy-4-hydroxybenzaldehyde 2233-18-3, 3,5-Dimethyl-4-hydroxybenzaldehyde 4549-32-0, 1,8-Dibromooctane 58370-39-1
(starting material; prepn. and optical properties of oxadiazole contg. conjugated-nonconjugated blue and blue-green **light** **emitting** copolymers)

L95 ANSWER 13 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2001:92779 Document No. 134:334094 Exciplex formation with distyrylbenzene derivatives and N,N-dimethylaniline. Wang, S.; Bazan, G. C. (Departments of Chemistry and Materials, Center for Polymer and Organic Solids, University of California, Santa Barbara, CA, 93106, USA). Chemical Physics Letters, 333(6), 437-443 (English) 2001. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier Science B.V..

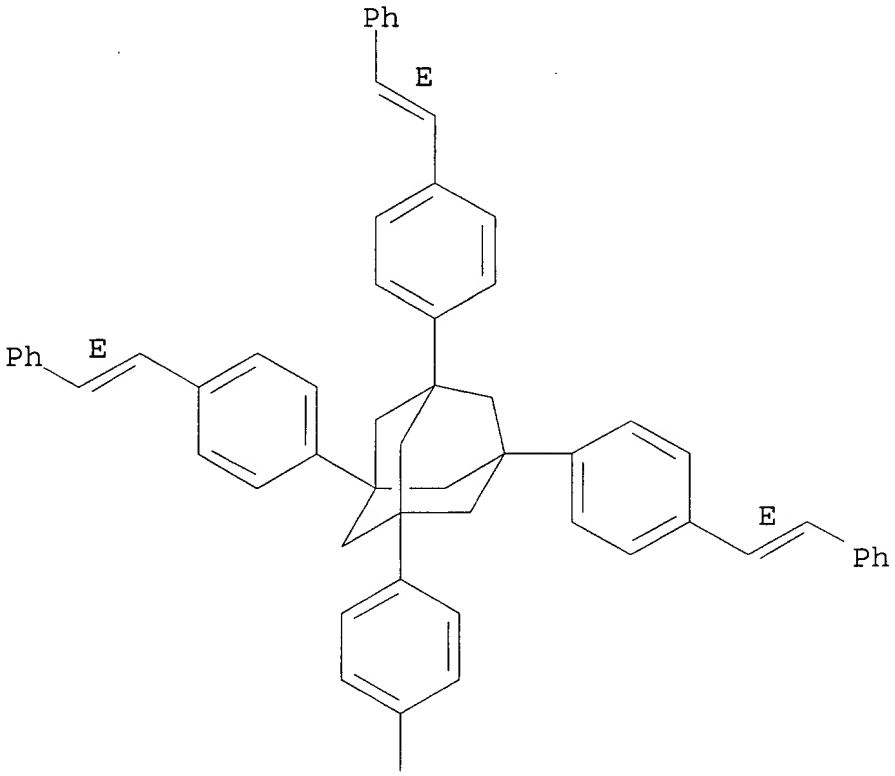
AB Exciplex formation between N,N-dimethylaniline and a series of distyrylbenzene derivs. with varying structures was studied by cyclic voltammetry and fluorescence spectroscopy. The frequency of exciplex emission obeys the Weller equation. Increasing the electron affinity of the acceptor red-shifts emission, with a concomitant decrease in fluorescence efficiency. Increasing the conjugation length of the acceptor decreases its excited state singlet energy more quickly than its electron affinity. As a result, exciplex formation is discouraged with increasing conjugation length.

IT **288104-98-3** **288104-99-4** **336195-49-4**
(exciplex formation between dimethylaniline and distyrylbenzene

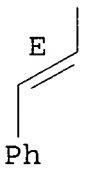
derivs.)
RN 288104-98-3 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

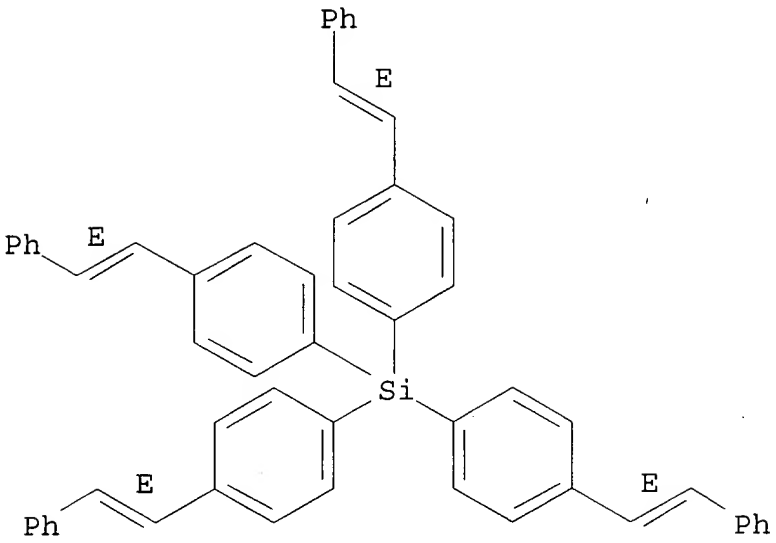


PAGE 2-A



RN 288104-99-4 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

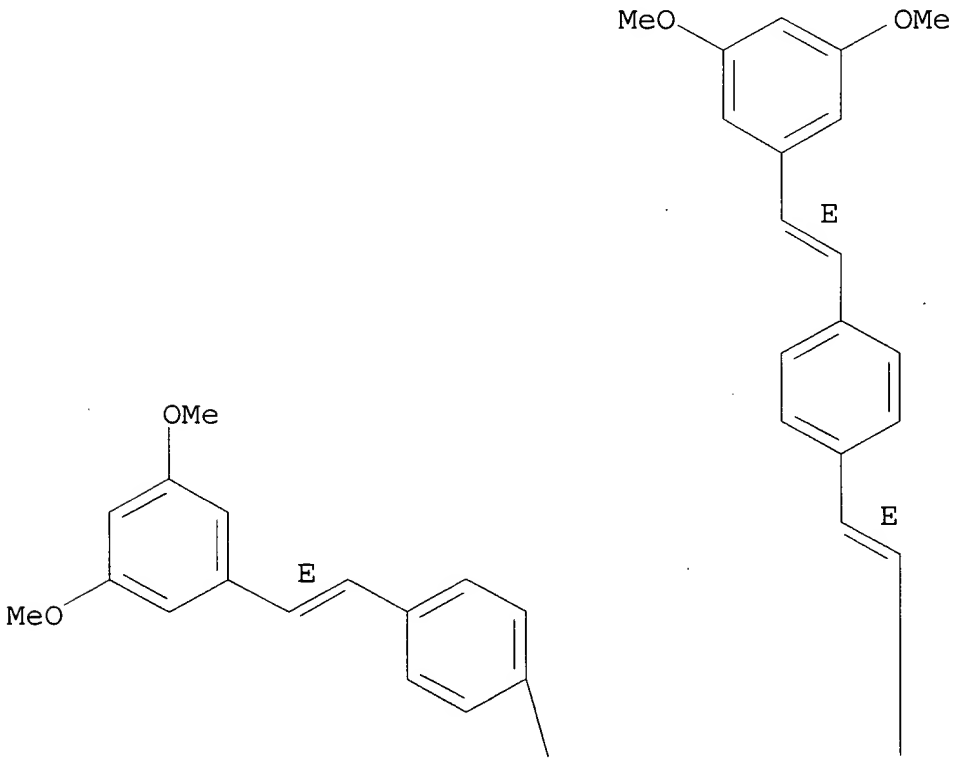
Double bond geometry as shown.



RN 336195-49-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-(3,5-dimethoxyphenyl)ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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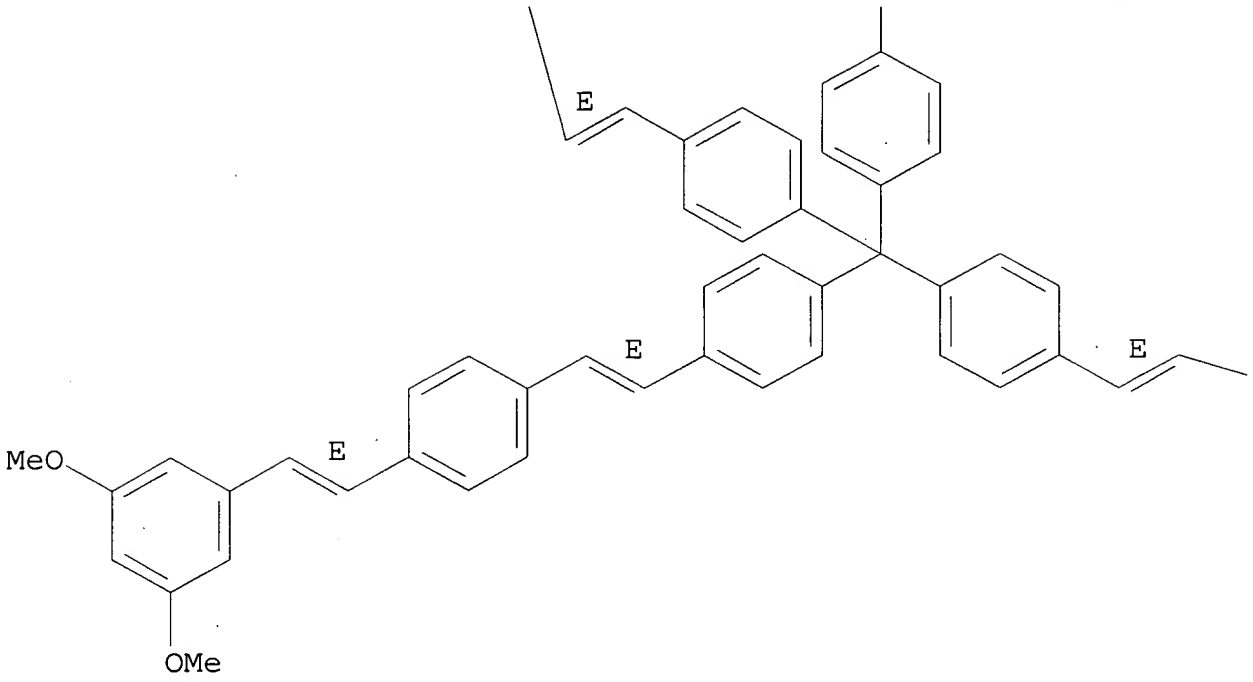
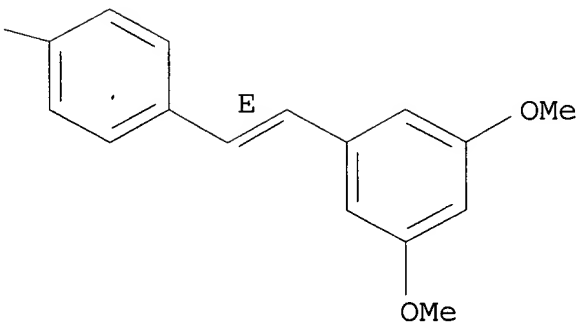


PAGE 2-B



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

IT Electron affinity
Exciplex
Excited singlet state
Fluorescence quenching
Free energy
Molecular structure-property relationship
Photoinduced **electron transfer**
Reduction potential
(exciplex formation between dimethylaniline and distyrylbenzene derivs.)

IT 121-69-7, N,N-Dimethylaniline, properties 1608-41-9 120926-88-7
128207-26-1 131941-42-9 152332-21-3 205105-80-2 220980-41-6
246258-70-8 246258-71-9 246258-72-0 **288104-98-3**
288104-99-4 336195-48-3 **336195-49-4**
336195-50-7 336195-51-8 336195-52-9 336195-53-0 336195-54-1
336195-55-2 336195-56-3
(exciplex formation between dimethylaniline and distyrylbenzene derivs.)

L95 ANSWER 14 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2001:36118 Document No. 134:345874 **Electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers. Robinson, Matthew R.; Wang, Shujun; Bazan, Guillermo C.; Cao, Yong (Department of Chemistry Department of Materials Science Institute for Polymers and Organic Solids, University of California, Santa Barbara, CA, 93106, USA). Advanced Materials (Weinheim, Germany), 12(22), 1701-1704 (English) 2000. CODEN: ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.

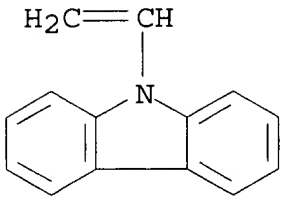
AB The authors report that mols. based on the tetrakis(4-styryldistyrylbenzene)methane framework also give amorphous films and that these can be used in the fabrication of **light-emitting** diodes (LED5) with small turn-on voltages. The authors also present characterization studies that indicate varying levels of interchromophore contact within the resulting amorphous films. Efficient org. LEDs can be fabricated using **tetrahedral** mols. of intermediate dimensions. Fabrication took advantage of the film-forming ability of these amorphous materials. Device performance can be improved by choice of anode layer and is likely to -show further improvements by better matching the electrode's workfunction to the material's HOMO-LUMO gap. The better performance of T-4R-OC6H13 relative to T-4R-OC8H17 appears to be due to its superior film-forming qualities. Current studies are aimed at developing structure-morphol. relations for this class of compds. by examg. the effect of chain length and substitution pattern on thermal properties. An addnl. area of interest is how the arrangement of mols. within these org. glasses affects the fluorescence properties of the bulk.

IT **25067-59-8**, Poly(vinyl carbazole)

(**electroluminescence** from well-defined
tetrahedral oligophenylenevinylene tetramers)
RN 25067-59-8 HCAPLUS
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

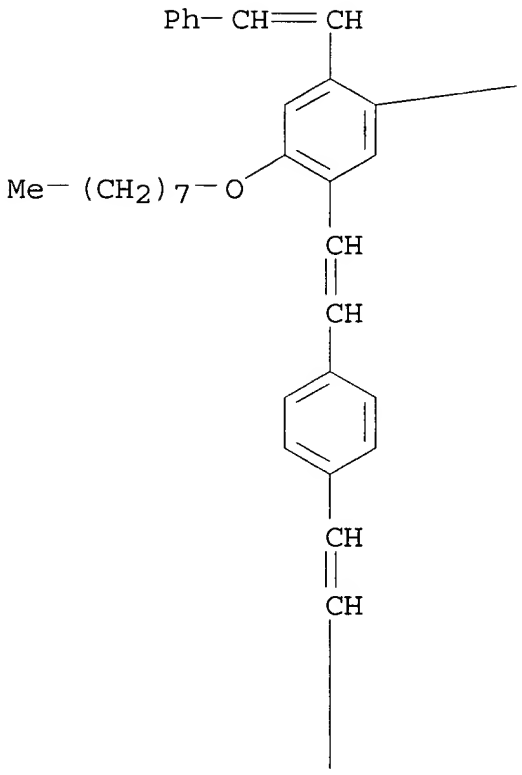
CM 1

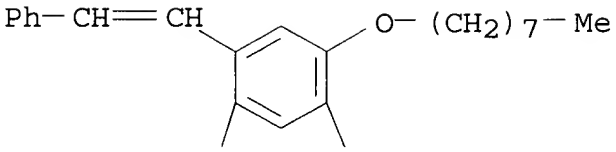
CRN 1484-13-5
CMF C14 H11 N



IT **338460-80-3P 338460-81-4P**
(**electroluminescence** from well-defined
tetrahedral oligophenylenevinylene tetramers)
RN 338460-80-3 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[2-[4-[2-[2,5-bis(octyloxy)-4-(2-phenylethenyl)phenyl]ethenyl]phenyl]ethenyl]-(9CI) (CA INDEX NAME)

PAGE 1-A





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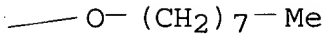
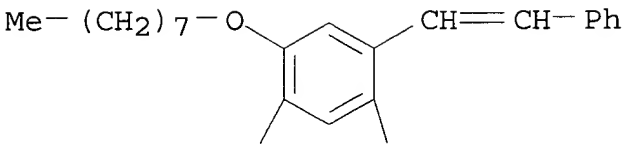
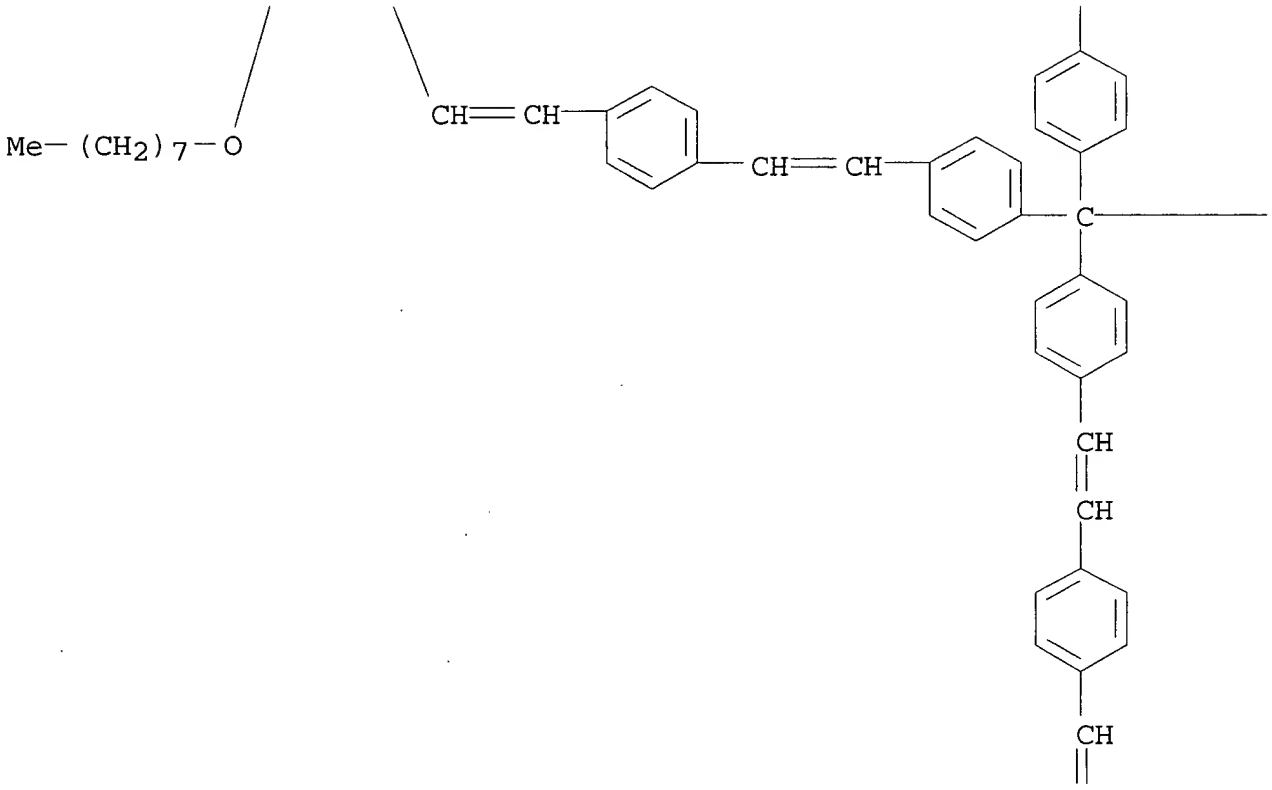
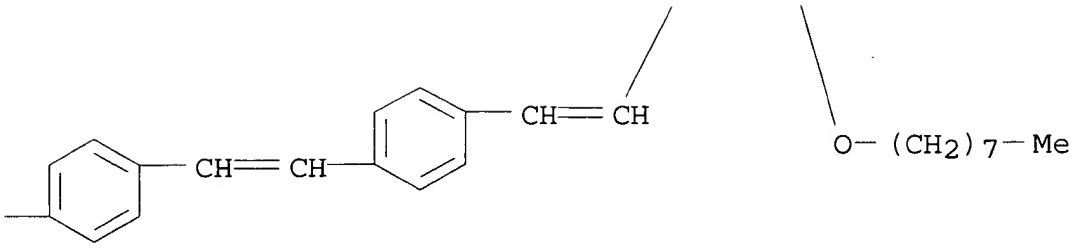




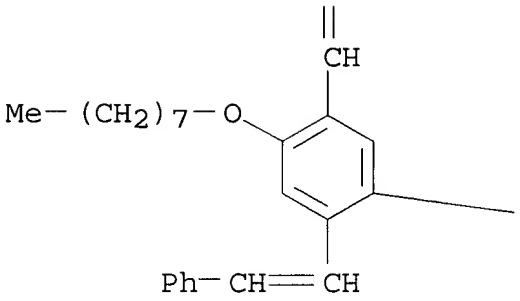
PAGE 2-A



PAGE 2-B



PAGE 3-A



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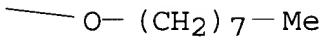
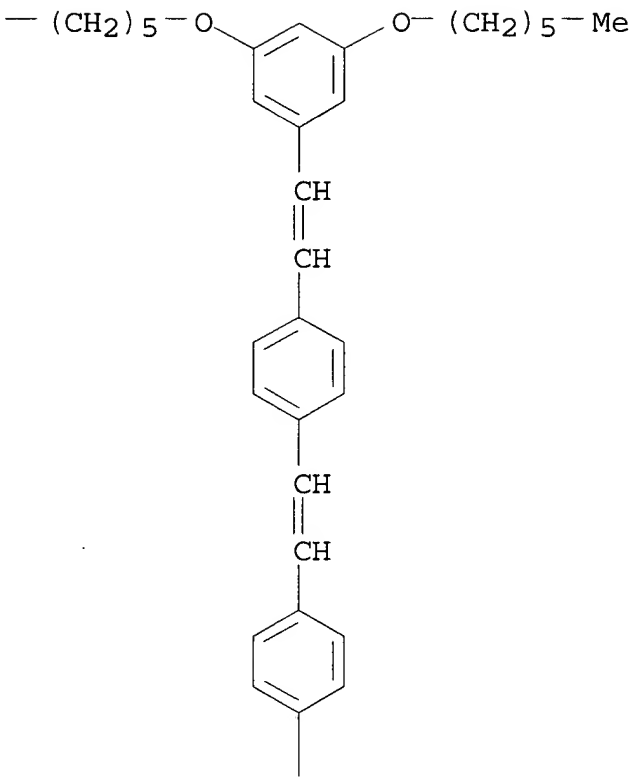


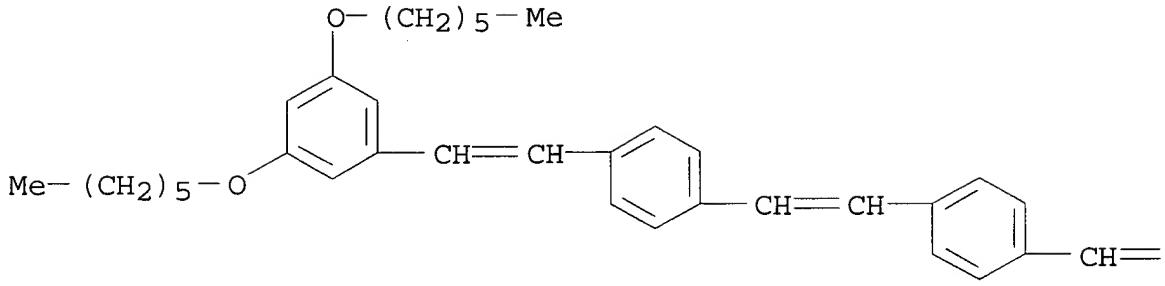
RN 338460-81-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[2-[4-[2-[4-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 1-B



PAGE 2-A



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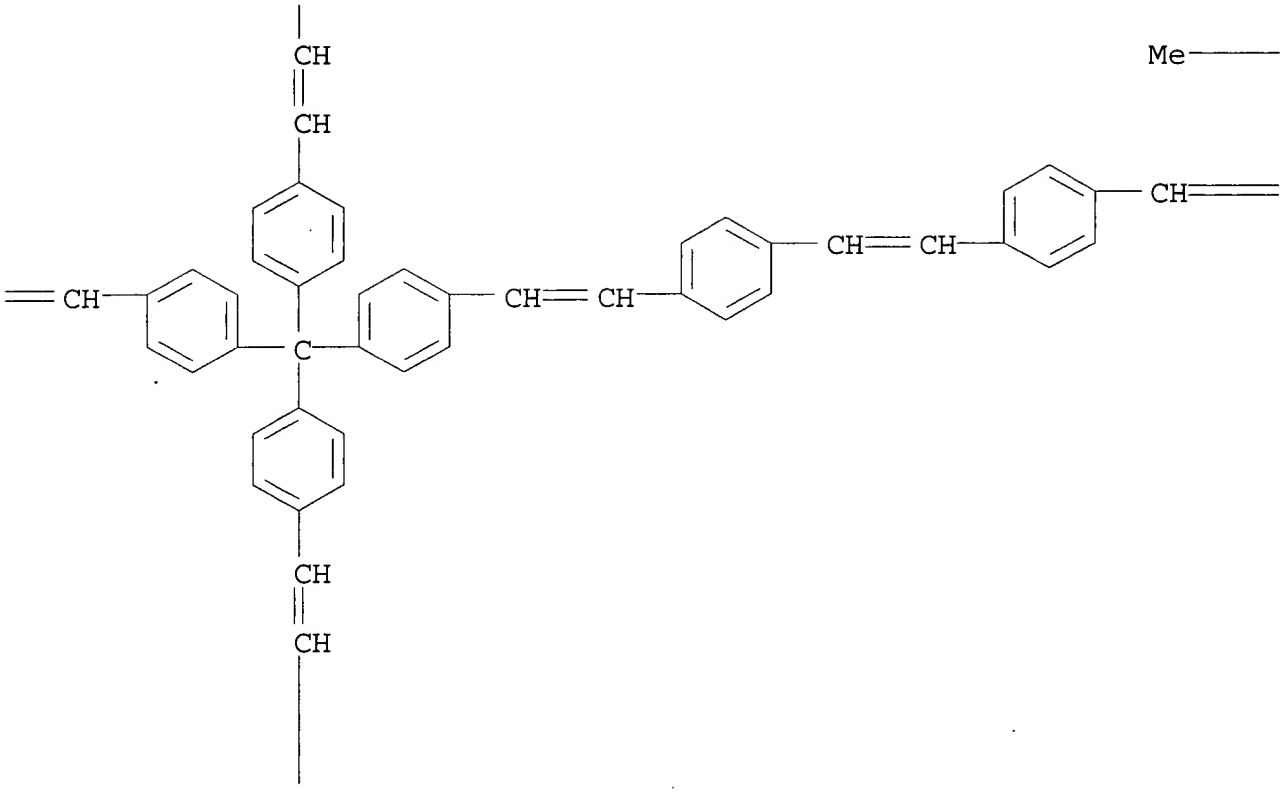

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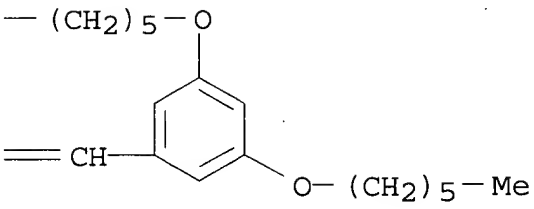

PAGE 3-A

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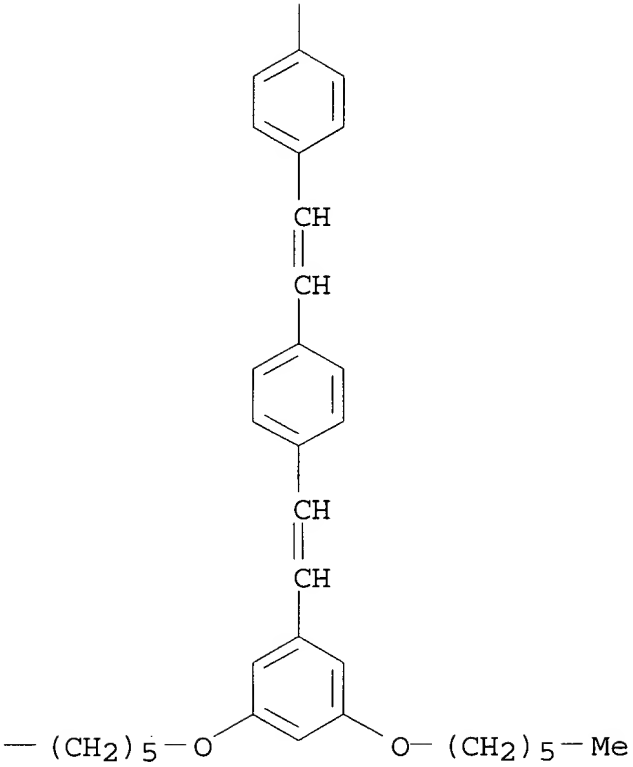
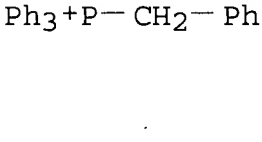
PAGE 3-B

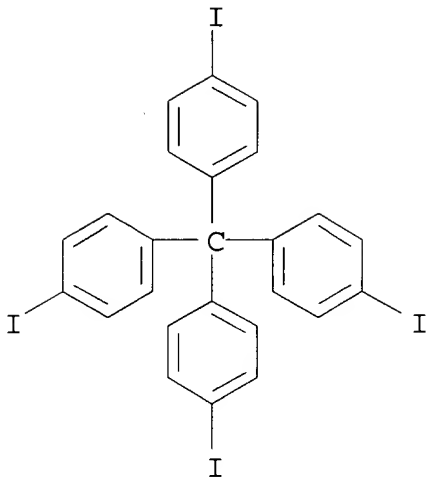


IT **1449-46-3**, Benzyltriphenylphosphonium bromide
134080-67-4, Tetrakis(4-iodophenyl)methane
338460-76-7 338460-78-9 338460-79-0
(**electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

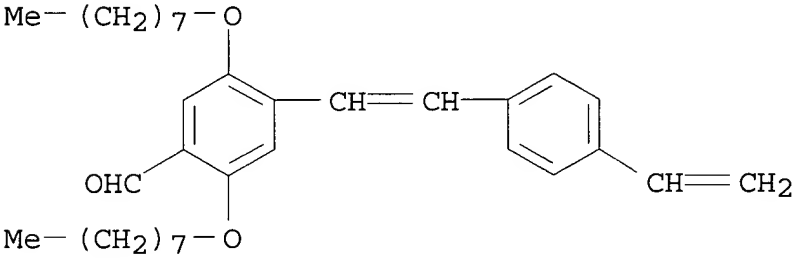
RN 1449-46-3 HCAPLUS
CN Phosphonium, triphenyl(phenylmethyl)-, bromide (9CI) (CA INDEX NAME)



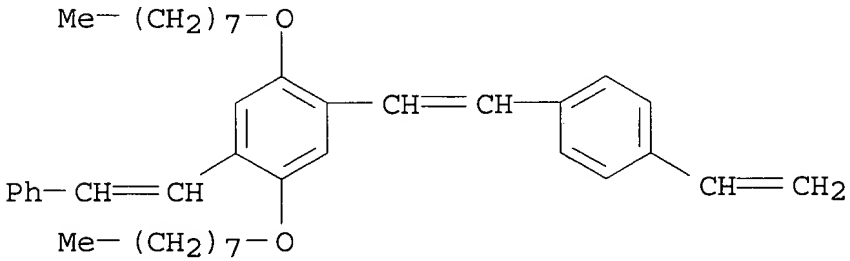
RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



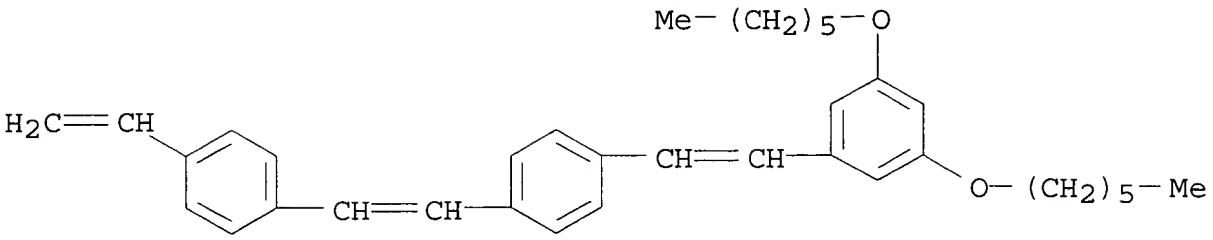
RN 338460-76-7 HCAPLUS
CN Benzaldehyde, 4-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)- (9CI) (CA INDEX NAME)



RN 338460-78-9 HCAPLUS
CN Benzene, 1-[2-(4-ethenylphenyl)ethenyl]-2,5-bis(octyloxy)-4-(2-phenylethenyl)- (9CI) (CA INDEX NAME)



RN 338460-79-0 HCAPLUS
CN Benzene, 1-[2-[3,5-bis(hexyloxy)phenyl]ethenyl]-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76

ST phenylene vinylene oligomer tetramer **electroluminescence**
LED luminescence UV; current voltage LED phenylene vinylene oligomer tetramer

IT Electric current-potential relationship
Electroluminescent devices
HOMO (molecular orbital)
LUMO (molecular orbital)
Luminescence
Luminescence, **electroluminescence**
Solvent effect
UV and visible spectra
(**electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

IT Tetramers
(oligophenylenevinylene; **electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

IT **25067-59-8**, Poly(vinyl carbazole) 25233-30-1, Polyaniline 126213-51-2, Poly(3,4-ethylenedioxythiophene)
(**electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

IT **338460-80-3P 338460-81-4P**
(**electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

IT **1449-46-3**, Benzyltriphenylphosphonium bromide **134080-67-4**, Tetrakis(4-iodophenyl)methane **338460-76-7 338460-78-9 338460-79-0**
(**electroluminescence** from well-defined **tetrahedral** oligophenylenevinylene tetramers)

L95 ANSWER 15 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2000:401573 Document No. 133:51004 **Electroluminescent** device with arylethylene derivatives in **hole transport** layer. Shi, Jianmin; Tang, Ching W.; Chen, Chin H. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1009042 A2 20000614, 34 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-203961 19991125. PRIORITY: US 1998-208071 19981209.

GI

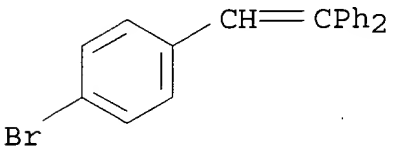
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Org. multilayer **electroluminescent** devices including an anode and cathode between which are provided a **hole transport** layer and an **electron transport** layer disposed in operative relationship with the **hole transport** layer are described in which the **hole transport** layer includes .gtoreq.1 org. compd. described by the general formulas I, II, and III (n = 1-6; R1, R2, and R5 are individually selected from H, C1-24 alkyl, C5-28 (un)substituted aryl, C5-28 (un)substituted heteroaryl, F, Cl, Br, or CN; and R3, R4, and R6 are individually selected from H, C1-24 alkyl, C5-28 (un)substituted aryl, or C5-28 (un)substituted heteroaryl).

IT **18648-66-3P**
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

RN 18648-66-3 HCAPLUS

CN Benzene, 1-bromo-4-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)



IC ICM H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

ST **electroluminescent** device arylethylene deriv **hole transport** layer

IT **Electroluminescent** devices
Electroluminescent devices
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

IT 1450-63-1 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 123847-85-8 142289-08-5
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

IT 213749-94-1
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

IT 186412-15-7P
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

IT 119-61-9, reactions 122-52-1, Triethyl phosphite 523-27-3
589-15-1, p-Bromobenzyl bromide
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)
IT **18648-66-3P** 38186-51-5P 274908-92-8P
(**electroluminescent** devices with **hole transport** layers contg. arylethylene derivs.)

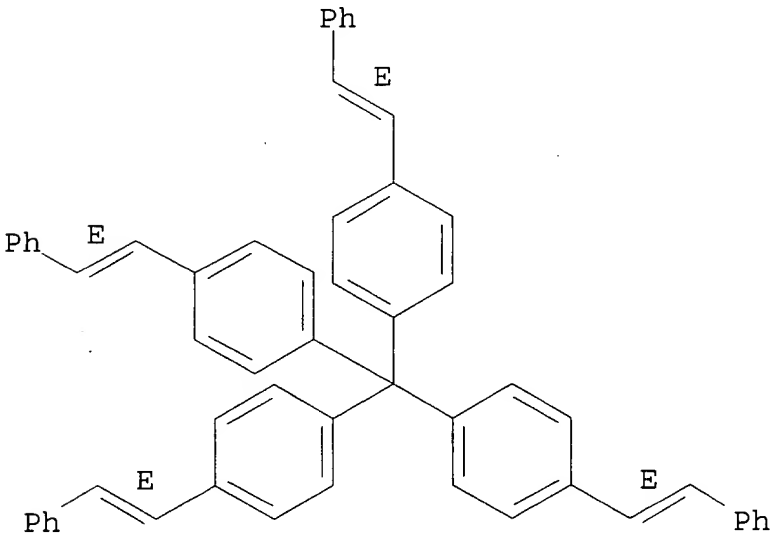
L95 ANSWER 16 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2000:372089 Document No. 133:163909 Synthesis, Morphology, and Optical Properties of **Tetrahedral** Oligo(phenylenevinylene) Materials. Wang, Shujun; Oldham, Warren J., Jr.; Hudack, Raymond A., Jr.; Bazan, Guillermo C. (Department of Chemistry, University of California, Santa Barbara, CA, 93106, USA). Journal of the American Chemical Society, 122(24), 5695-5709 (English) 2000. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 133:163909. Publisher: American Chemical Society.
AB A novel topol. strategy is described for designing amorphous mol. solids suitable for **optoelectronic** applications. In this approach, **chromophores** are attached to a **tetrahedral** point of convergence. Stilbenoid units were covalently linked to tetraphenylmethane, tetraphenyladamantane, or tetraphenylsilane cores using palladium catalyzed coupling methodol. Thus, reaction of E(C6H5X)4 (E = C, adamantane, X = I; E = Si, X = Br) with styrene or 4,4'-tert.-butylvinylstilbene under Heck coupling conditions yields the corresponding tetrakis(stilbenyl) (E(STB)4) and tetrakis(4-tert.-butylstyrylstilbenyl) (E(tBuSSB)4) compds. Similarly, reaction of 1,1-diphenyl-2-(4-dihydroxyboronphenyl)ethene or 2-(4-pinacolatoboronphenyl)-3,3-diphenylacrylonitrile with tetrakis(4-bromophenyl)methane using Suzuki coupling methodol. gives tetrakis(4,4'-(2,2-diphenyl-vinyl)-1,1'-biphenyl)methane (C(DPVBi)4) or tetrakis(4,4'-(3,3-diphenylacrylonitrile)-1,1'-biphenyl)methane (C(DPAB)4), resp., in good yields. Compds. with more extended conjugation can also be prepd. Thus, reaction of excess 1-(4'-tert.-butylstyryl)-4-(4'-vinylstyryl)benzene with C(C6H4I)4 provides tetrakis(4-(4'-(4''-tert.-butylstyryl)styryl)stilbenyl)methane (C(4R-tBu)4) in low yield (.apprx.20%). The more sol. analog, tetrakis(4-(4'-(3'',5''-di-tert.-butylstyryl)styryl)stilbenyl)methane (C(4R-2tBu)4) is prepd. similarly using 1-(3',5'-di-tert.-butylstyryl)-4-(4'-vinylstyryl)benzene and in better yield (.apprx.80%). Alkoxy substituents can also be used to increase soly. Tetrakis((4-(2',5'-dioctyloxy-4'-styryl)styryl)stilbenyl)methane, C(4R-(OC8H17)2)4, was prepd. by treatment of C(C6H4I)4 with excess 2,5-dioctyloxy-1-styryl-4-(4'-vinylstyryl)benzene (yield .apprx. 73%). The simple stilbenyl derivs. were found by DSC measurements and powder diffraction expts. to be cryst. compds. Comparison of single-crystal X-ray diffraction data shows that C(STB)4 and Si(STB)4 form isomorphous crystals. The larger E(tBuSSB)4, C(DPVBi)4, and C(DPAB)4 compds. readily form amorphous glasses with elevated glass transition temps. (Tg = 142-190 .degree.C) in the absence of solvent. Extending the conjugation length of the arm

leads to more stable glasses. For example, the glass transition temp. of C(4R-tBu)4 was measured at 230 .degree.C. Soln. phase optical spectroscopic data of E(tBuSSB)4 (E = C, adamantane, Si) are characteristic of the parent distyrylbenzene **chromophore**. Films, however, show broad and significantly red-shifted emission spectra. In contrast, C(DPVBi)4 gives absorption and emission spectra which are nearly identical between dil. soln. phase samples and neat solid films. The emission of C(DPAB)4 is broad and structureless, reminiscent of exciplex or excimer emission. Films of the tetramers with longer arms (C(4R-tBu)4, C(4R-2tBu)4, and C(4R-(OC8H17)2)4) show emission properties which are dependent on sample history. Annealing the sample at elevated temp. leads to red-shifted emission as a result of better interdigitation between the optically active fragments.

IT **205105-80-2P 205105-82-4P 288104-98-3P**
288104-99-4P 288105-00-0P 288105-01-1P
288105-02-2P 288105-05-5P 288105-08-8P
288105-10-2P 288105-12-4P 288105-13-5P
288105-15-7P 288105-16-8P
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)

RN 205105-80-2 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-phenylethenyl]- (9CI) (CA INDEX NAME)

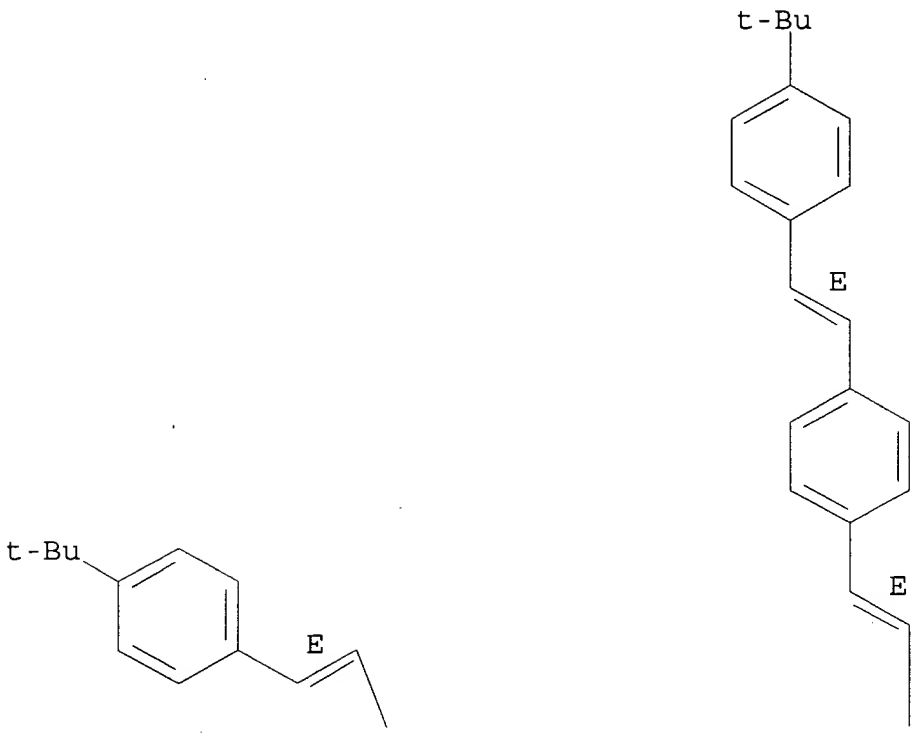
Double bond geometry as shown.



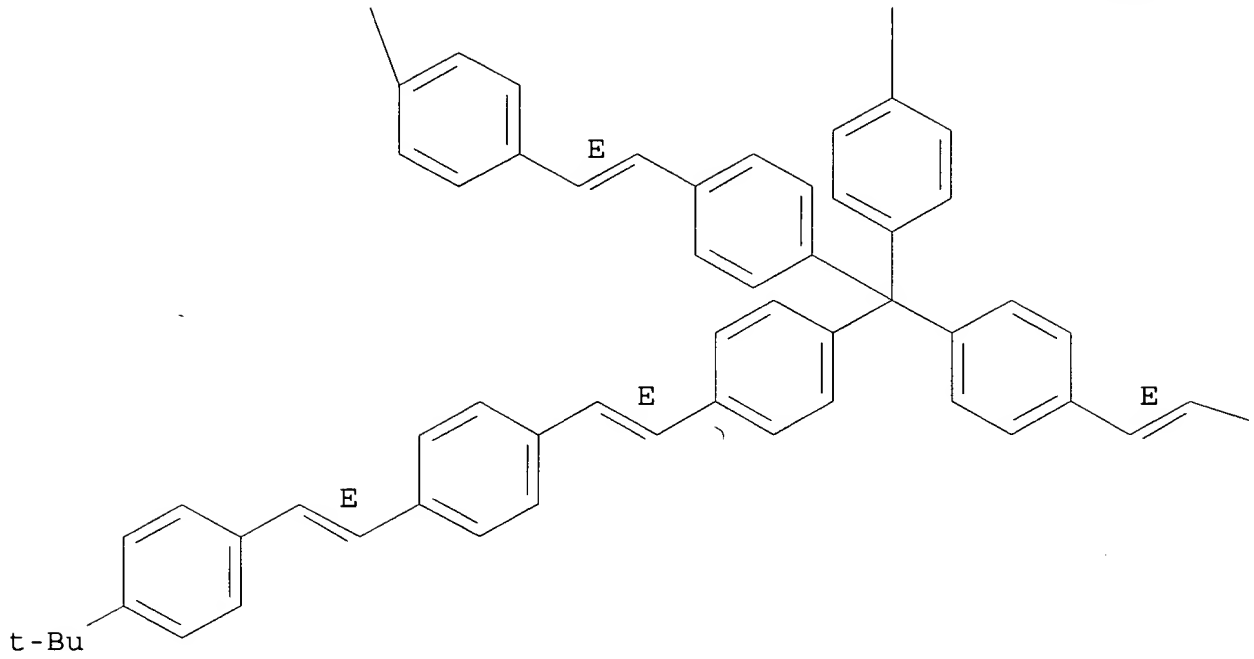
RN 205105-82-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 2-A



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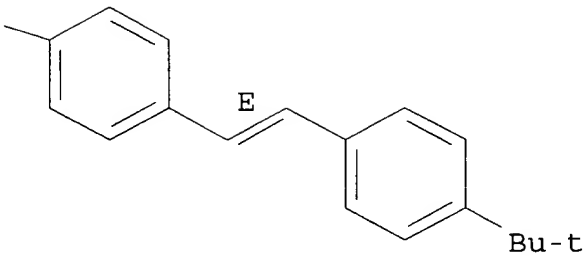
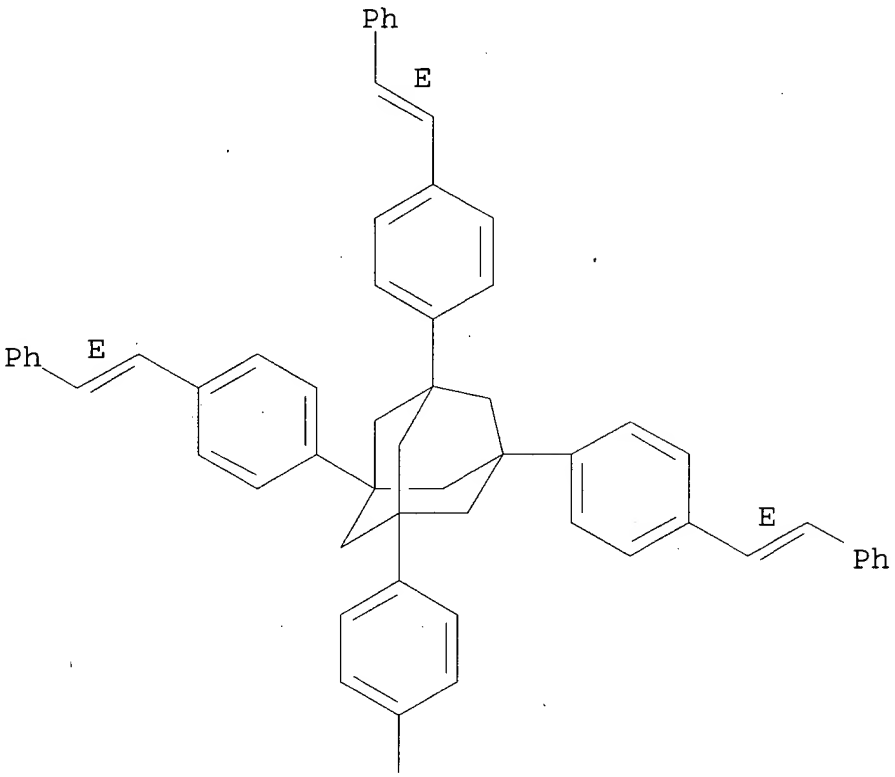


RN 288104-98-3 HCAPLUS

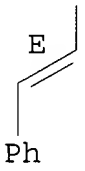
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

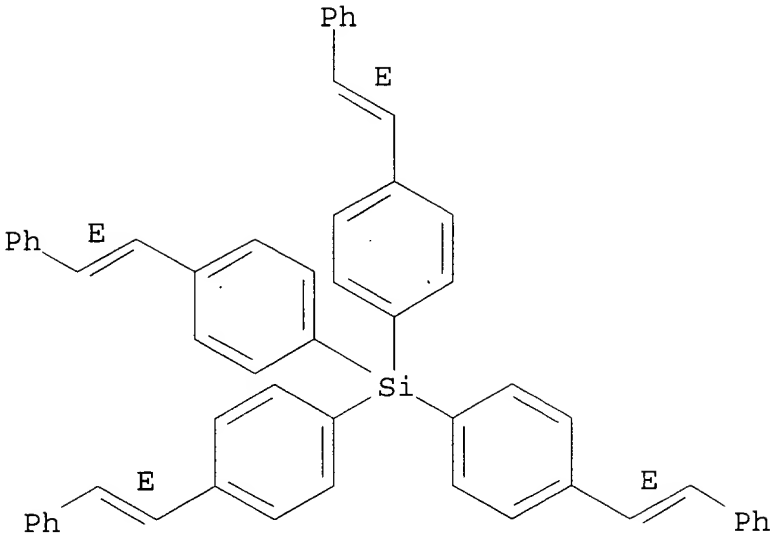


PAGE 2-A



RN 288104-99-4 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-phenylethenyl]phenyl]- (9CI) (CA INDEX NAME)

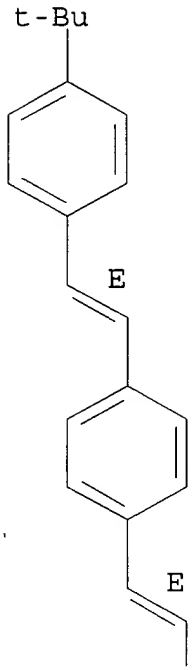
Double bond geometry as shown.



RN 288105-00-0 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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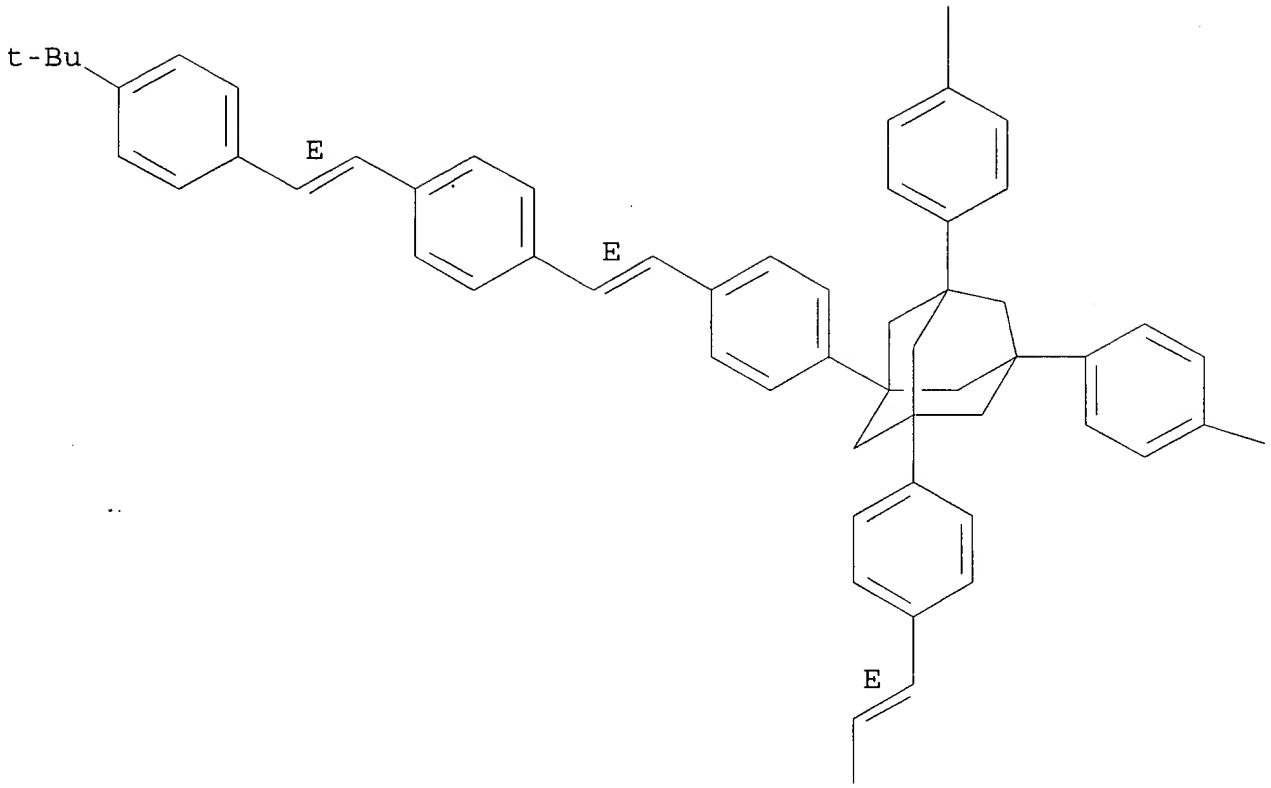
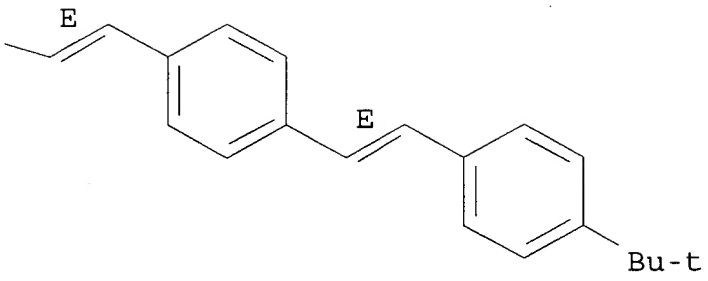


PAGE 2-B



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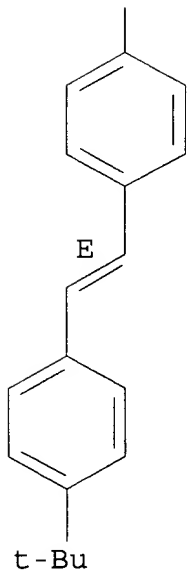
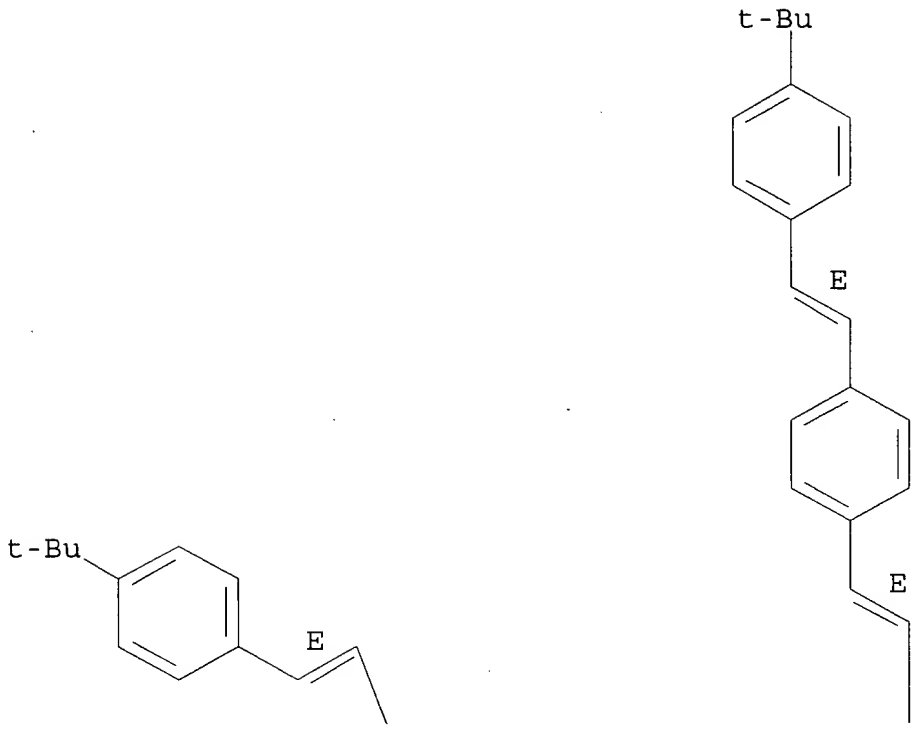


RN 288105-01-1 HCAPLUS
CN Silane, tetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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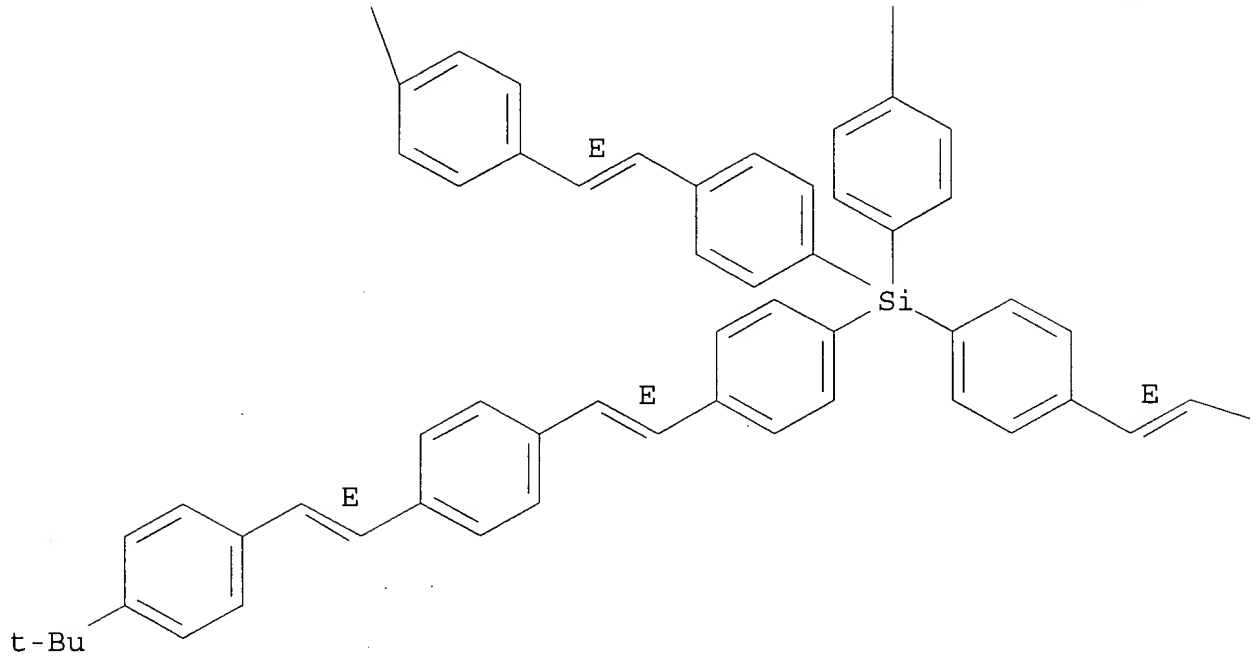
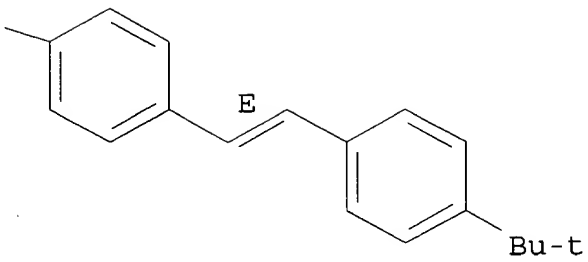


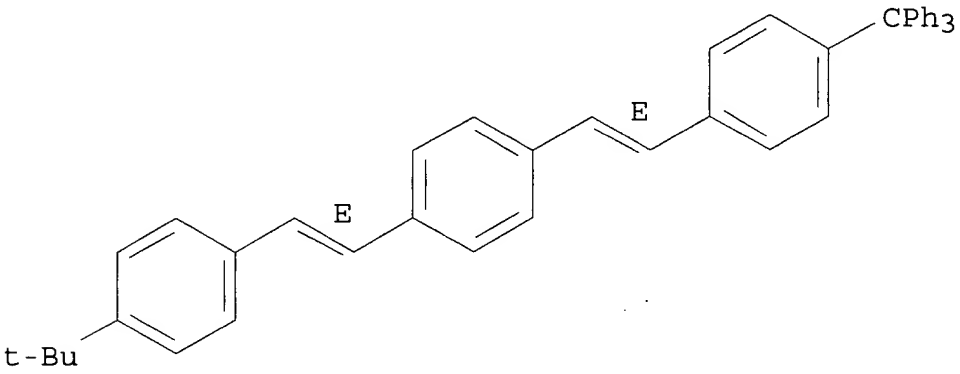
PAGE 2-B



RN 288105-02-2 HCAPLUS

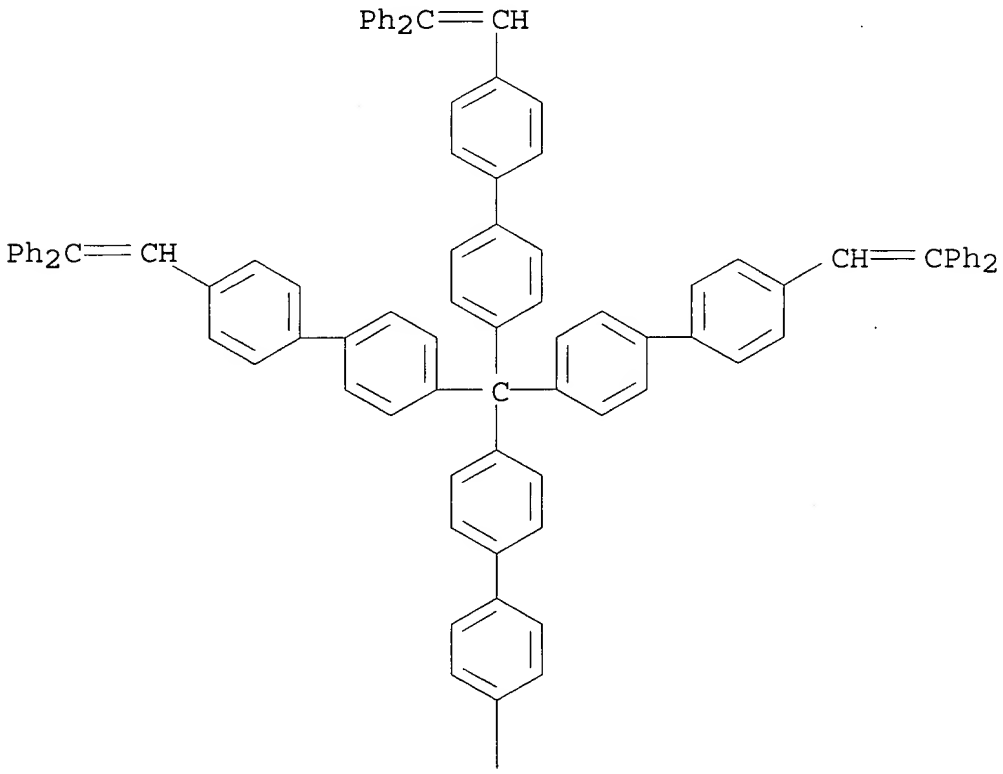
CN Benzene, 1-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]-4-(triphenylmethyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

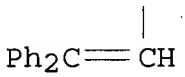


RN 288105-05-5 HCAPLUS
CN 1,1'-Biphenyl, 4,4'',4'''',4''''''-methanetetrayltetrakis[4'-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

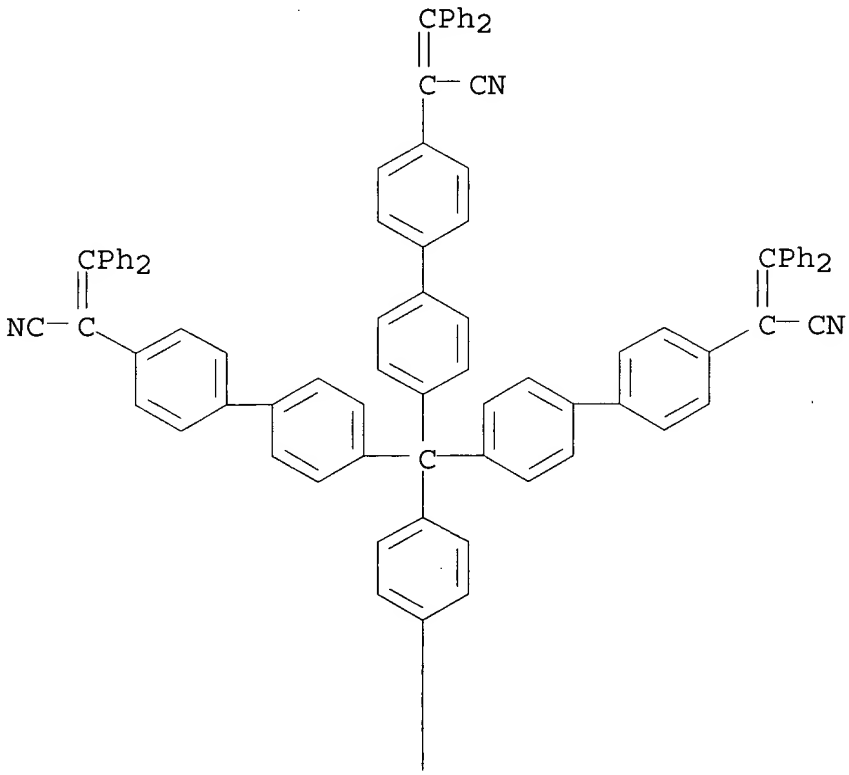


PAGE 2-A

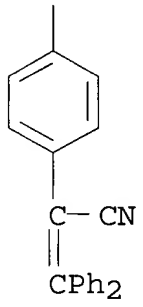


RN 288105-08-8 HCAPLUS
CN [1,1'-Biphenyl]-4-acetonitrile, 4',4''',4''''',4'''''''-methanetetrayltetrakis[.alpha.-(diphenylmethylene)- (9CI) (CA INDEX NAME)

PAGE 1-A



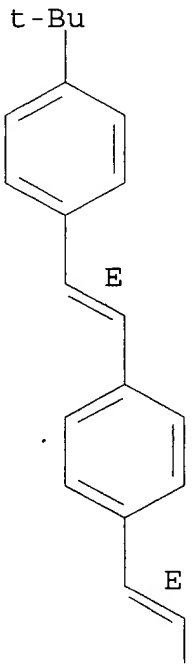
PAGE 2-A



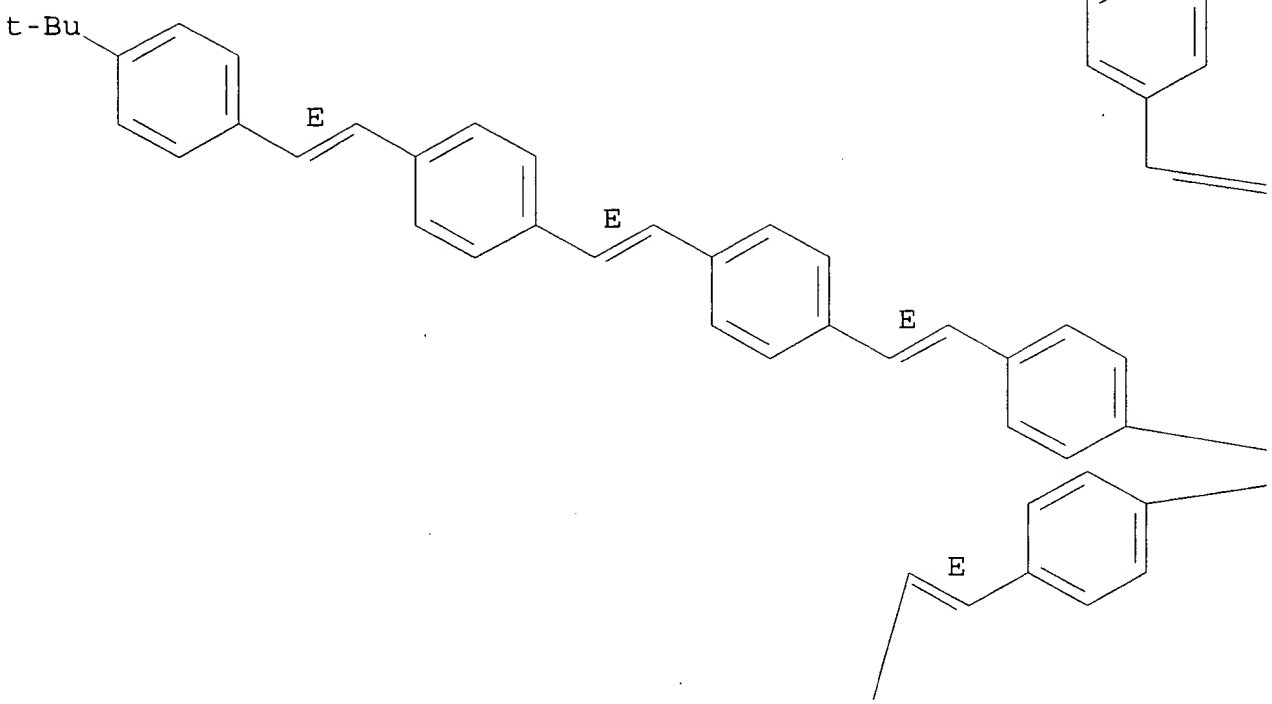
RN 288105-10-2 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

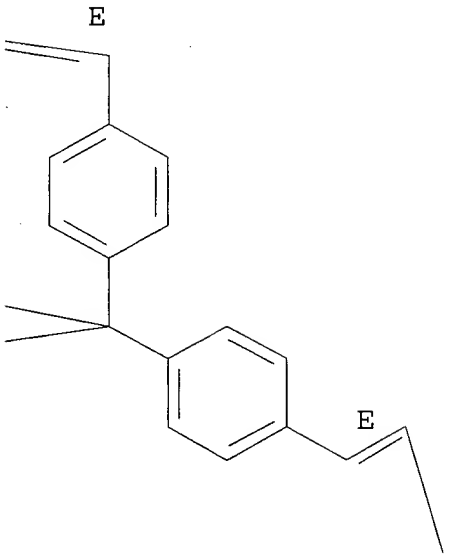
PAGE 1-A



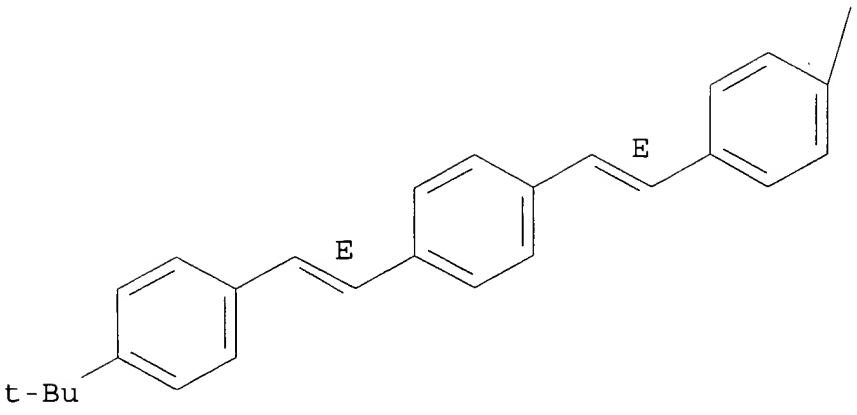
PAGE 2-A



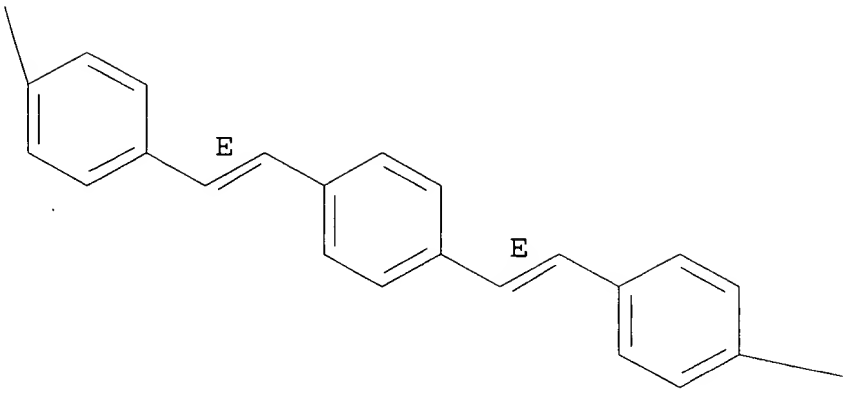
PAGE 2-B



PAGE 3-A



PAGE 3-B



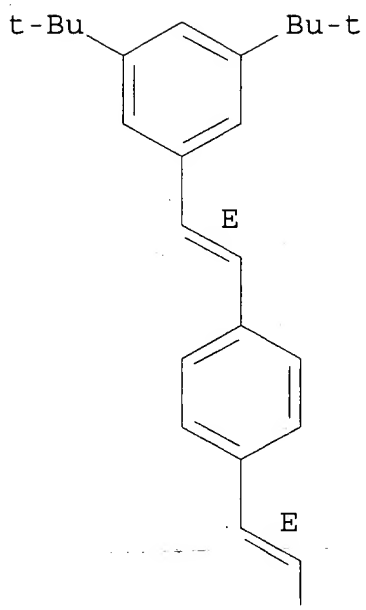
PAGE 3-C

—Bu-t

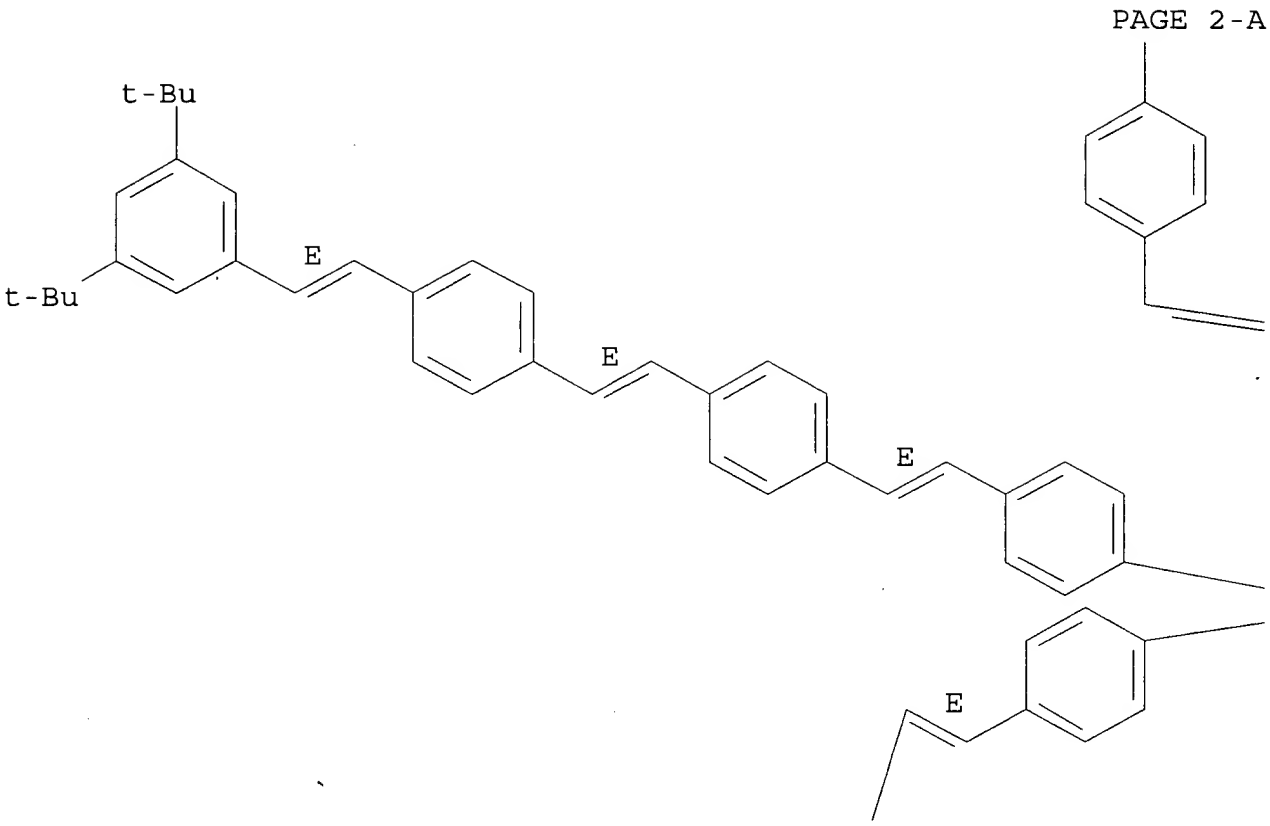
RN 288105-12-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

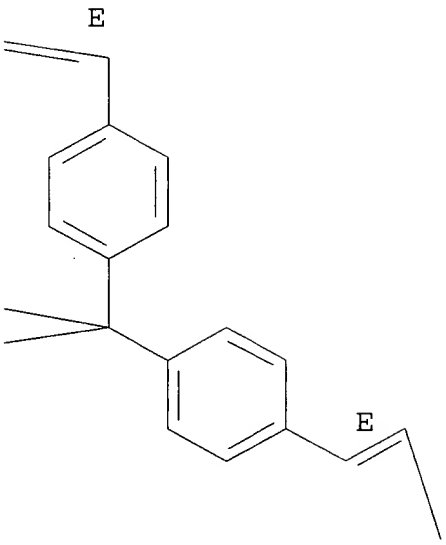
PAGE 1-A



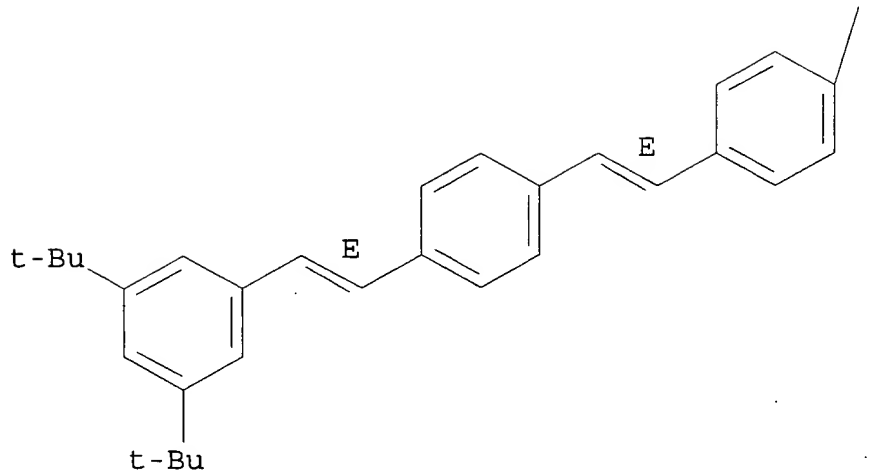
PAGE 2-A



PAGE 2-B



PAGE 3-A



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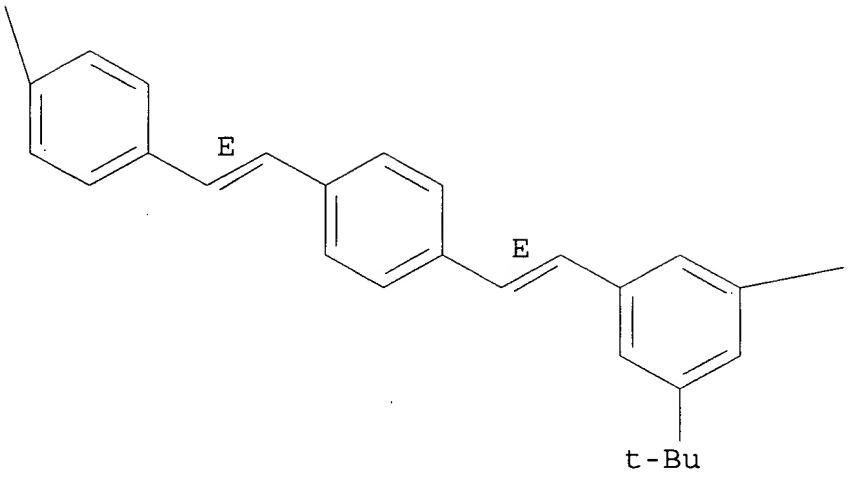
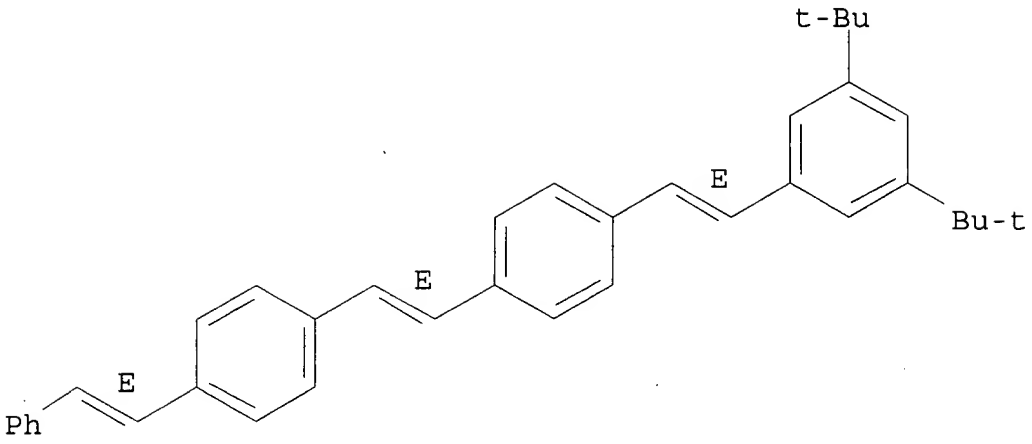


PAGE 3-C

—Bu-t

RN 288105-13-5 HCAPLUS
CN Benzene, 1-[(1E)-2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]-4-[(1E)-2-[4-[(1E)-2-phenylethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

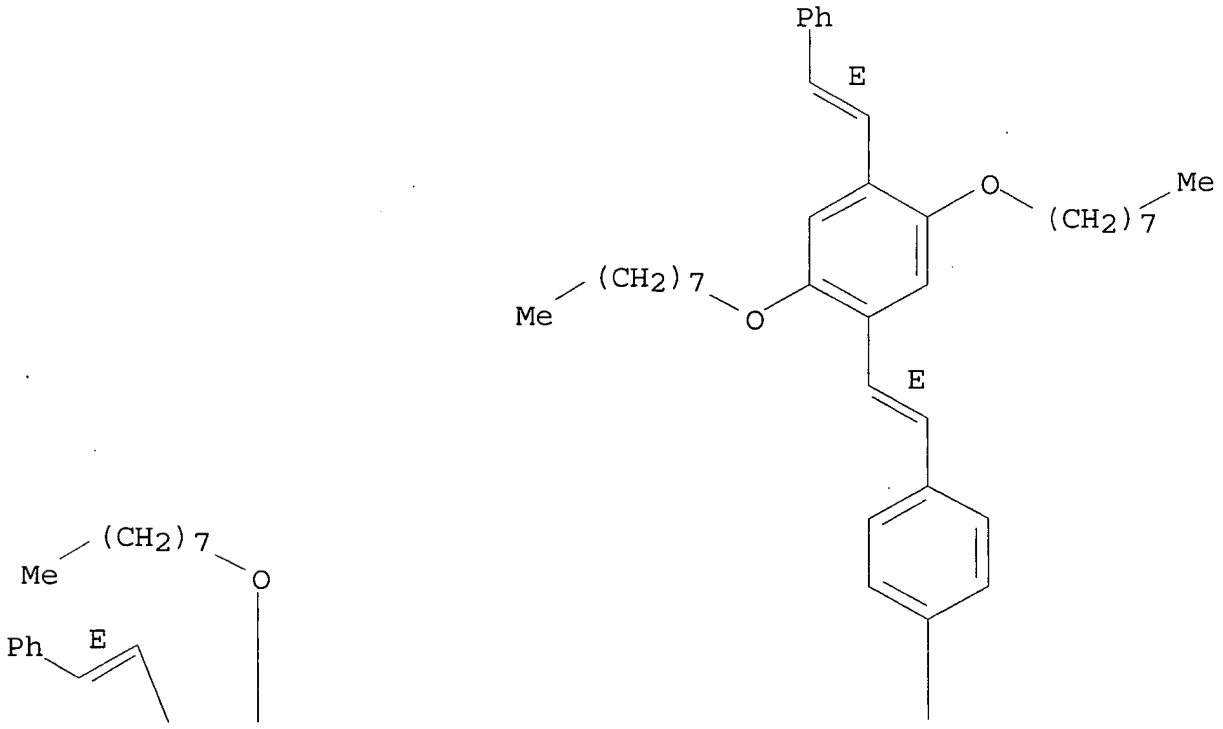
Double bond geometry as shown.



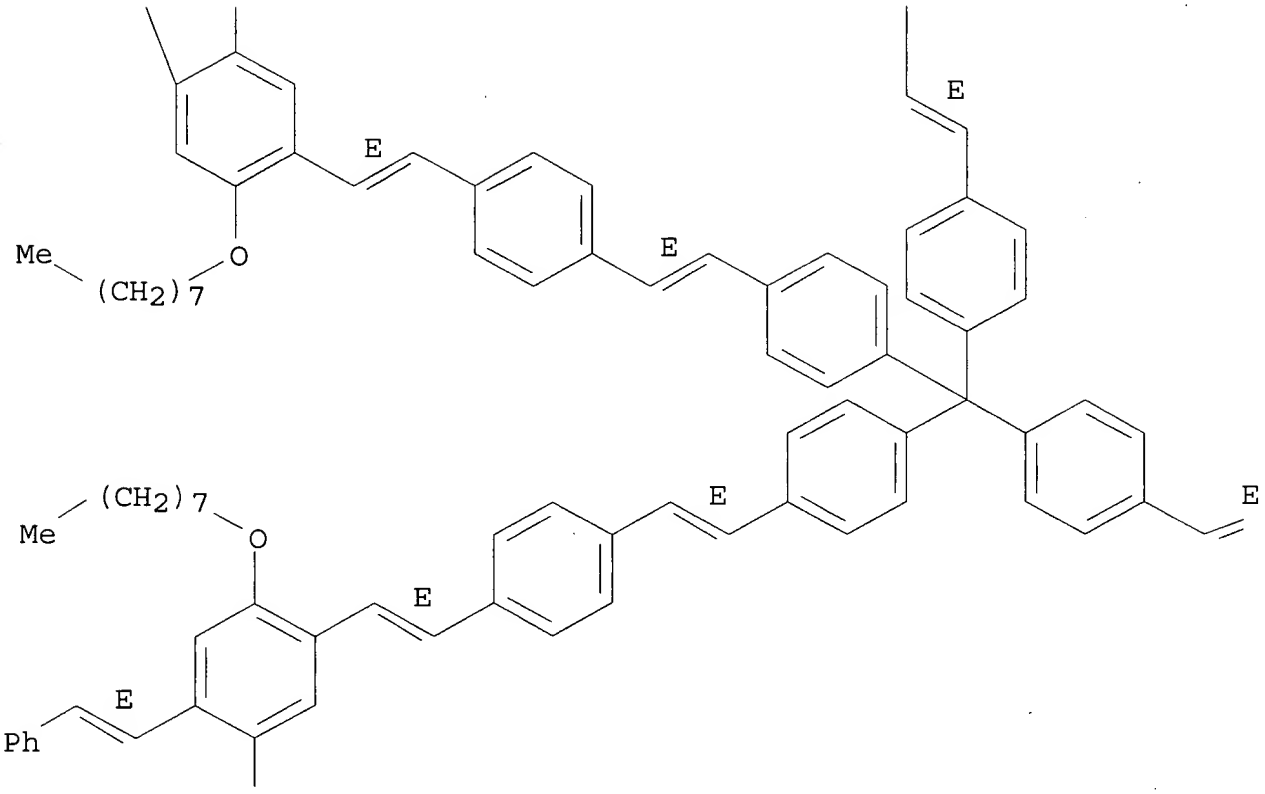
RN 288105-15-7 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[2,5-bis(octyloxy)-4-[(1E)-2-phenylethenyl]phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

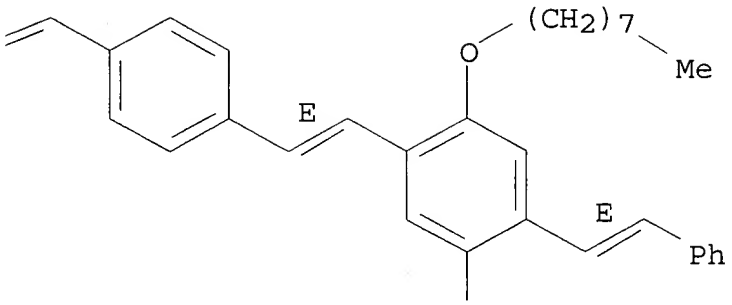
PAGE 1-A



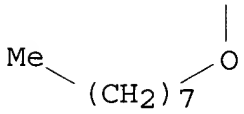
PAGE 2-A



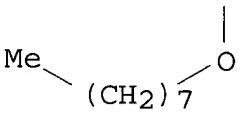
PAGE 2-B



PAGE 3-A

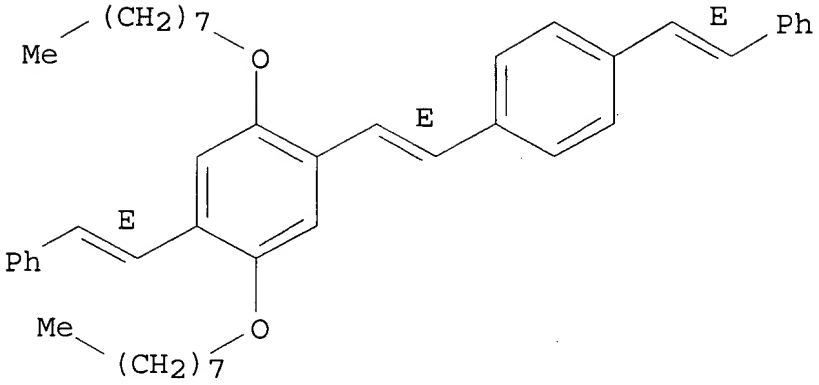


PAGE 3-B



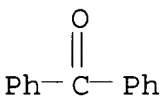
RN 288105-16-8 HCAPLUS
CN Benzene, 1,4-bis(octyloxy)-2-[(1E)-2-phenylethenyl]-5-[(1E)-2-[4-[(1E)-2-phenylethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

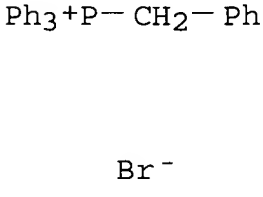


IT **119-61-9**, Benzophenone, reactions **1449-46-3**, Benzyltriphenylphosphonium bromide **18733-98-7**, Tetrakis(4-bromophenyl)silane **36393-44-9** **38186-51-5**, Diethyl 4-bromobenzylphosphonate **47562-35-6**, 4-Vinylbenzyltriphenylphosphonium chloride **65413-33-4**, 4-tert.Butylbenzyltriphenylphosphonium bromide **73183-34-3**, Bis(pinacolato)diborane **81172-89-6** **105309-59-9**, Tetrakis(4-bromophenyl)methane **134080-67-4**, Tetrakis(4-iodophenyl)methane **144970-30-9**
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)

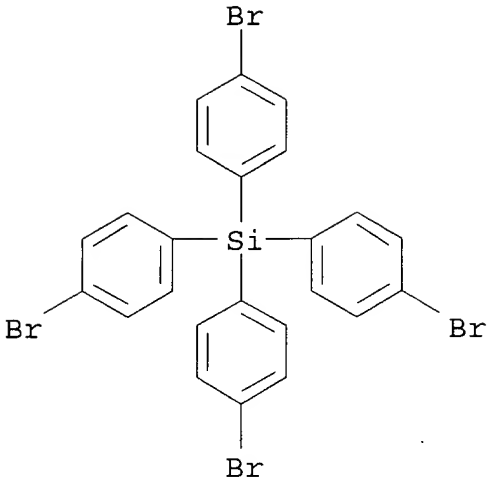
RN 119-61-9 HCAPLUS
CN Methanone, diphenyl- (9CI) (CA INDEX NAME)



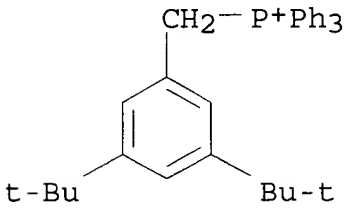
RN 1449-46-3 HCAPLUS
CN Phosphonium, triphenyl(phenylmethyl)-, bromide (9CI) (CA INDEX NAME)



RN 18733-98-7 HCAPLUS
CN Silane, tetrakis(4-bromophenyl)- (9CI) (CA INDEX NAME)

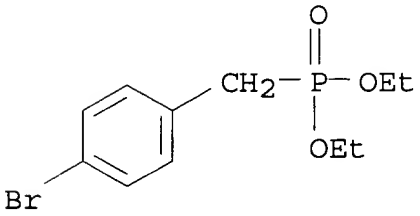


RN 36393-44-9 HCAPLUS
CN Phosphonium, [[3,5-bis(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)



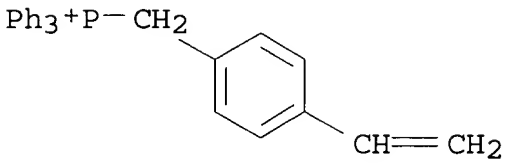
● Br⁻

RN 38186-51-5 HCAPLUS
CN Phosphonic acid, [(4-bromophenyl)methyl]-, diethyl ester (9CI) (CA INDEX NAME)



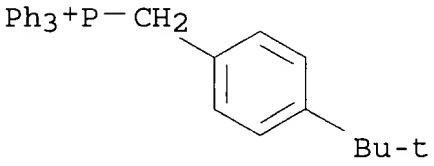
RN 47562-35-6 HCAPLUS
CN Phosphonium, [(4-ethenylphenyl)methyl]triphenyl-, chloride (9CI)

(CA INDEX NAME)



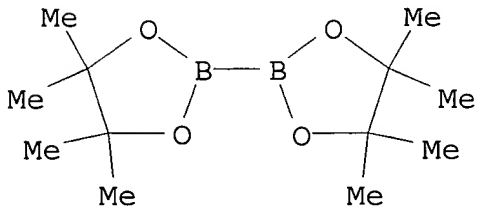
● Cl^-

RN 65413-33-4 HCAPLUS
CN Phosphonium, [[4-(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)

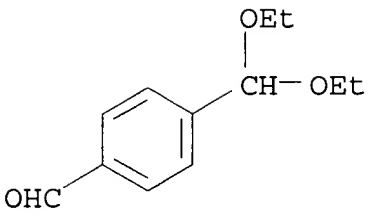


● Br^-

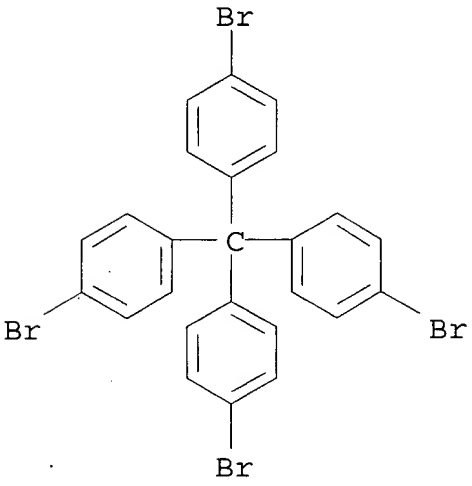
RN 73183-34-3 HCAPLUS
CN 2,2'-Bi-1,3,2-dioxaborolane, 4,4,4',4',5,5,5',5'-octamethyl- (9CI) (CA INDEX NAME)



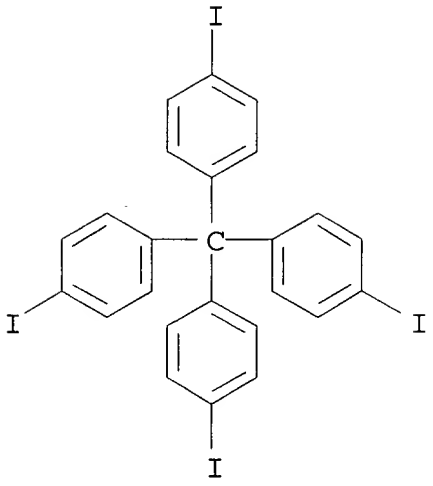
RN 81172-89-6 HCAPLUS
CN Benzaldehyde, 4-(diethoxymethyl)- (9CI) (CA INDEX NAME)



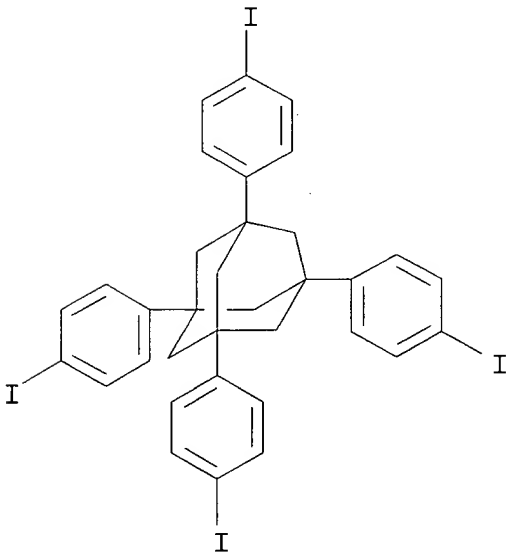
RN 105309-59-9 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-bromo- (9CI) (CA INDEX NAME)



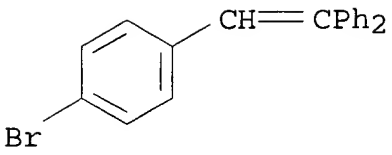
RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



RN 144970-30-9 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane, 1,3,5,7-tetrakis(4-iodophenyl)- (9CI) (CA INDEX NAME)

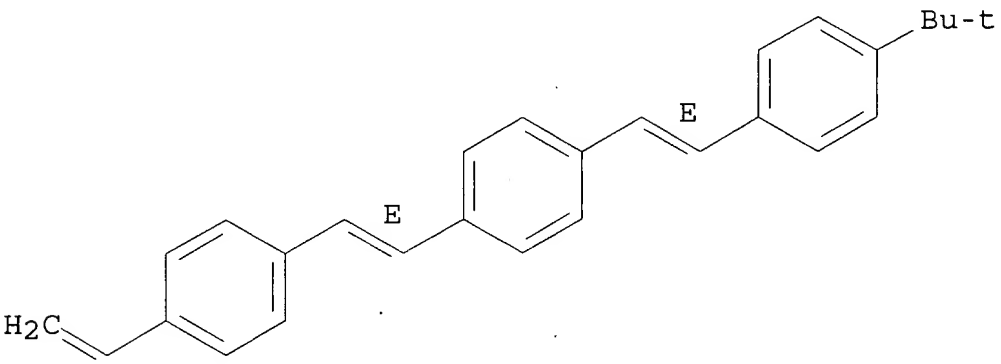


IT **18648-66-3P 183051-53-8P 288105-04-4P 288105-06-6P 288105-07-7P**
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)
RN 18648-66-3 HCAPLUS
CN Benzene, 1-bromo-4-(2,2-diphenylethenyl)- (9CI) (CA INDEX NAME)

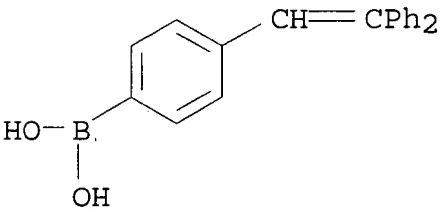


RN 183051-53-8 HCAPLUS
CN Benzene, 1-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]-4-[(1E)-2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)

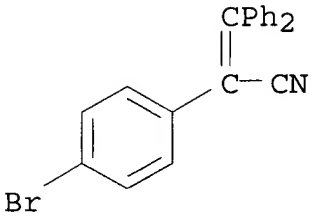
Double bond geometry as shown.



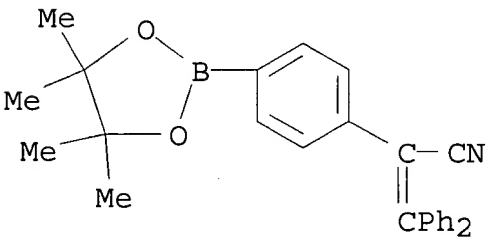
RN 288105-04-4 HCAPLUS
CN Boronic acid, [4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 288105-06-6 HCAPLUS
CN Benzeneacetonitrile, 4-bromo-.alpha.-(diphenylmethylene)- (9CI) (CA INDEX NAME)



RN 288105-07-7 HCAPLUS
CN Benzeneacetonitrile, .alpha.-(diphenylmethylene)-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)- (9CI) (CA INDEX NAME)



CC 25-2 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 75
ST oligophenylenevinylene prepn crystal mol structure optical property; glass transition temp oligophenylenevinylene; **optoelectronic** device oligophenylenevinylene
IT Liquid crystals
Liquid crystals
(films; of **tetrahedral** oligo(phenylenevinylene) materials)
IT Films
Films
(liq.-crystal; of **tetrahedral** oligo(phenylenevinylene) materials)
IT Crystal structure
Glass transition temperature
Molecular structure
(of **tetrahedral** oligo(phenylenevinylene) materials)
IT Optical properties
Optoelectronic semiconductor devices
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)
IT 125643-81-4P **205105-80-2P 205105-82-4P**
288104-98-3P 288104-99-4P 288105-00-0P
288105-01-1P 288105-02-2P 288105-03-3P
288105-05-5P 288105-08-8P 288105-10-2P
288105-12-4P 288105-13-5P 288105-15-7P
288105-16-8P

(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)

IT 100-42-5, reactions 105-06-6, p-Divinylbenzene 108-86-1, Bromobenzene, reactions **119-61-9**, Benzophenone, reactions 591-50-4, Iodobenzene **1449-46-3**, Benzyltriphenylphosphonium bromide 16532-79-9, 4-Bromophenylacetonitrile **18733-98-7**, Tetrakis(4-bromophenyl)silane **36393-44-9 38186-51-5**, Diethyl 4-bromobenzylphosphonate **47562-35-6**, 4-Vinylbenzyltriphenylphosphonium chloride **65413-33-4**, 4-tert.Butylbenzyltriphenylphosphonium bromide **73183-34-3**, Bis(pinacolato)diborane **81172-89-6 105309-59-9**, Tetrakis(4-bromophenyl)methane **134080-67-4**, Tetrakis(4-iodophenyl)methane **144970-30-9** 183051-50-5 186358-39-4, 4-Iodo-2,5-dioctyloxybenzaldehyde
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)

IT **18648-66-3P 183051-53-8P** 186358-31-6P **288105-04-4P 288105-06-6P 288105-07-7P** 288105-09-9P 288105-11-3P 288105-14-6P
(prepn., morphol., and optical properties of **tetrahedral** oligo(phenylenevinylene) materials)

L95 ANSWER 17 OF 28 HCAPLUS COPYRIGHT 2003 ACS

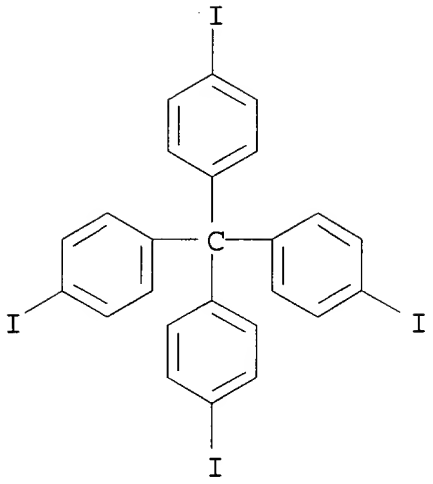
2000:267306 Document No. 132:300746 **Electroluminescent** material for organic **electroluminescent** device. Okada, Hisashi; Asanuma, Naoki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000119644 A2 20000425, 21 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-289594 19981012.

AB The **electroluminescent** material, suited for use in an org. **electroluminescent** display and backlight, is represented by C(L1-NR1R2)4 [R1,2 = aliph. hydrocarbons, aryl, and heterocyclic group; R1 and R2 may join directly or indirectly to form a ring; L1 = divalent group contg. arylene and arom. heterocyclic groups].

IT **134080-67-4**, Tetrakis(4-iodophenyl)methane
(**electroluminescent** material for org. **electroluminescent** device)

RN 134080-67-4 HCAPLUS

CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS C09K011-06; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
ST **electroluminescent** org material **optical** imaging device; org **electroluminescent** device **optical** display
IT **Electroluminescent** devices
(**electroluminescent** material for org. **electroluminescent** device)
IT Phosphors
(**electroluminescent**; **electroluminescent** material for org. **electroluminescent** device)
IT 1205-64-7, 3-Methyldiphenylamine **134080-67-4**, Tetrakis(4-iodophenyl)methane
(**electroluminescent** material for org. **electroluminescent** device)
IT 256-96-2P, 5H-Dibenz[b,f]azepine 29875-73-8P, 9H-Tribenz[b,d,f]azepine 201802-24-6P 255824-45-4P 264228-19-5P 264228-20-8P 264228-21-9P
(**electroluminescent** material for org. **electroluminescent** device)

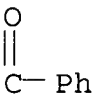
L95 ANSWER 18 OF 28 HCAPLUS COPYRIGHT 2003 ACS
2000:66504 Document No. 132:259638 New photoluminescent CuIN4 **chromophores**. Stabilisation of copper(I) by unconjugated diimines. Chowdhury, Shubhamoy; Patra, Goutam K.; Drew, Michael G. B.; Chattopadhyay, Nitin; Datta, Dipankar (Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Calcutta, 700 032, India). Dalton (3), 235-237 (English) 2000. CODEN: DALTFG. Publisher: Royal Society of Chemistry.
AB Two new photoluminescent homoleptic distorted **tetrahedral** CuIN4 **chromophores** [Cu(L1)2]ClO4 and [Cu(L2)2]ClO4 with

CuII/I potentials of 0.66-0.81 V vs. SCE are isolated by using two unconjugated diimines R1R2C:NCH2CH2N:CR1R2 (2:1 condensates of R1R2C:O and ethylenediamine; R1 = Ph, R2 = H (L1); R1 = R2 = Ph (L2)) as ligands.

IT **119-61-9**, Benzophenone, reactions
(for prepn. of copper(I) complex with unconjugated diimine)

RN 119-61-9 HCAPLUS

CN Methanone, diphenyl- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 72, 73

IT 100-52-7, Benzaldehyde, reactions **119-61-9**, Benzophenone, reactions
(for prepn. of copper(I) complex with unconjugated diimine)

L95 ANSWER 19 OF 28 HCAPLUS COPYRIGHT 2003 ACS

2000:54127 Document No. 132:115023 Amorphous molecular materials for **optoelectronic** devices and process for producing the same. Oldham, Warren, Jr. (Fed Corporation, USA). PCT Int. Appl. WO 2000003565 A1 20000120, 32 pp. DESIGNATED STATES: RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US15437 19990709. PRIORITY: US 1998-PV92418 19980710.

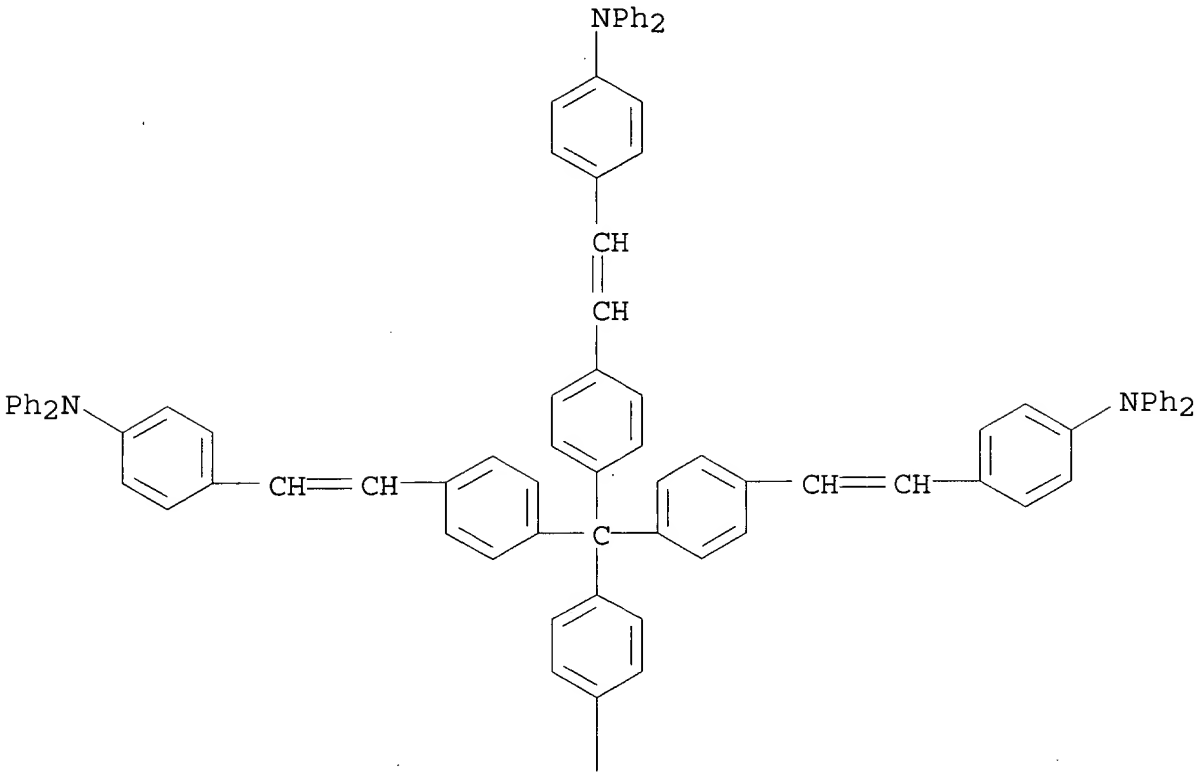
AB Org. **light-emitting** devices comprising a first electrode, a second electrode, and an org. stack interposed between the first electrode and the second electrode, are described in which the org. stack further comprises .gtoreq.1 org. layer (esp. a **hole-transporting** layer) which further comprises org. compds. so that the device continues to function in temps. in >145.degree.. The org. layer may comprise org. compds. with **tetrahedral** core structures (e.g., tetraphenylmethane, tetraphenylsilane, or tetraphenyladamantane), **tetrahedral** core structures contg. arom. side groups, **tetrahedral** core structures contg. arom. amine side groups, sym. **tetrahedral** core structures, sym. **tetrahedral** core structures contg. arom. side groups, and/or sym. **tetrahedral** core structures contg. arom. amine side groups.

IT **255824-54-5**
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)

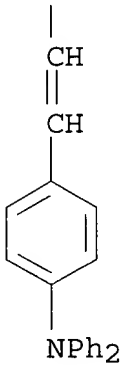
RN 255824-54-5 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[methanetetrayltetrakis(4,1-phenylene-2,1-ethenediyl)]tetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

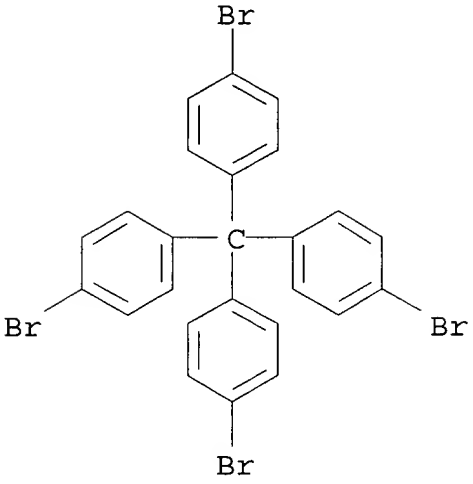


PAGE 2-A

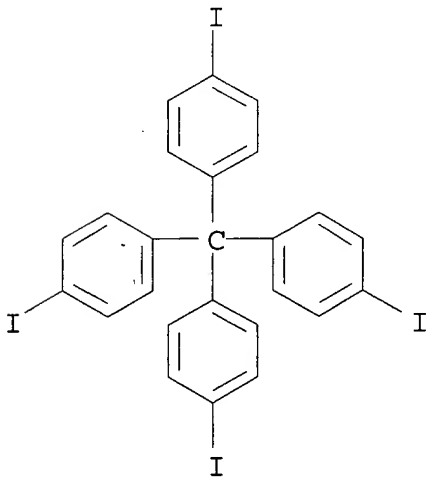


IT **105309-59-9**, Tetrakis(4-bromophenyl)methane
134080-67-4, Tetrakis(4-iodophenyl)methane
201338-08-1
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)

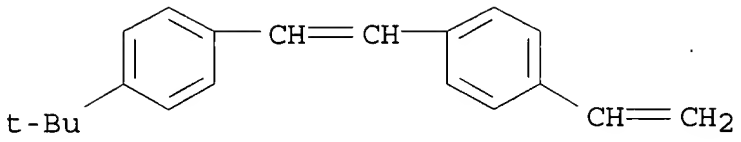
RN 105309-59-9 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-bromo- (9CI) (CA INDEX NAME)



RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



RN 201338-08-1 HCAPLUS
CN Benzene, 1-(1,1-dimethylethyl)-4-[2-(4-ethenylphenyl)ethenyl]- (9CI) (CA INDEX NAME)



IC H05B033-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 76
ST org **light emitting** device **tetrahedral** core compd; tetraphenylmethane deriv **light emitting** device; tetraphenylsilane deriv **light emitting** device; tetraphenyladamantane deriv **light emitting** device; tetraphenylgermane deriv **light emitting** device; tetraphenylplumbane deriv **light emitting** device; tetraphenylstannane deriv **light emitting** device
IT **Electroluminescent** devices
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)
IT **Electroluminescent** devices
(org.; org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)
IT 595-89-1D, Tetraphenylplumbane, derivs. 595-90-4D, Tetraphenylstannane, derivs. 1048-05-1D, Tetraphenylgermane, derivs. 1048-08-4D, Tetraphenylsilane, derivs. 16004-75-4D, derivs. 255824-03-4 255824-04-5 255824-05-6 255824-06-7 255824-08-9 255824-45-4 255824-53-4 **255824-54-5** 255824-56-7 255824-66-9 255824-73-8 255904-22-4
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)
IT 255721-13-2P
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)
IT 86-74-8, Carbazole **105309-59-9**, Tetrakis(4-bromophenyl)methane **134080-67-4**, Tetrakis(4-iodophenyl)methane **201338-08-1**
(org. **light-emitting** devices using amorphous materials with **tetrahedral** cores)

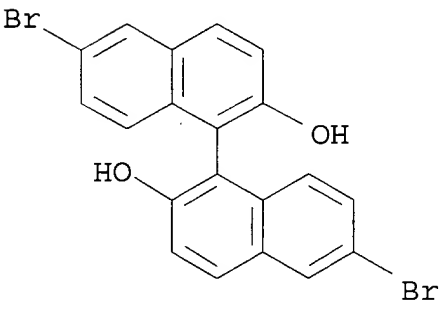
L95 ANSWER 20 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1999:788460 Document No. 132:123340 A Binaphthyl-Based Conjugated Polymer for **Light-Emitting** Diodes. Zheng, Lixin; Urian, R. Craig; Liu, Yunqi; Jen, Alex K.-Y.; Pu, Lin (Department of Chemistry, Northeastern University, Boston, MA, 02115, USA). Chemistry of Materials, 12(1), 13-15 (English) 2000. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.
AB The monomer 2,2'-dibutoxyl[1,1'-binaphthyl]-6,6'-dicarbaldehyde was prepd. by a 3-step synthesis starting from 1,1'-bi-2-naphthol. A

binaphthyl-based conjugated polymer, poly(binaphthyl vinylene-1,4-phenylene vinylene) (PBVPV), was prepd. by the Wittig-Horner condensation of 2,2'-dibutoxyl[1,1'-binaphthyl]-6,6'-dicarbaldehyde and xylene tetra-Et disphosphonate. The thermal properties of PBVPV were analyzed using thermogravimetric anal. and differential scanning calorimetry under N2. The cyclic voltammogram of PBVPV-coated indium tin oxide (ITO) glass was recorded in MeCN soln. Photoluminescent and **electroluminescent** spectra of PBVPV were also measured. The polymer emits a strong blue fluorescence under UV irradn. in dil. CHCl3 soln. and shows 3 photoluminescent peaks at 447, 462, and 500 nm. To study the **electroluminescence** property of the polymer, a single-layer **light emitting** device was made by spin-coating a thin layer of the polymer (.apprx.100 nm) onto ITO glass substrates. The current-voltage and light-voltage curves of this device showed a typical diode behavior.

IT **13185-00-7P 256388-15-5P**
(prepn. and optical properties of binaphthyl-based conjugated polymer for LEDs)

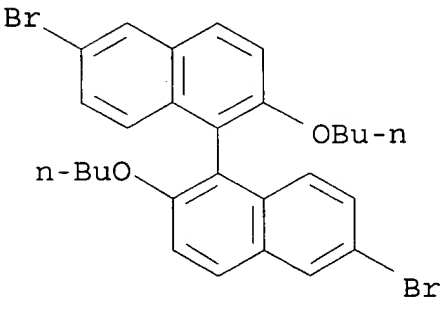
RN 13185-00-7 HCAPLUS

CN [1,1'-Binaphthalene]-2,2'-diol, 6,6'-dibromo- (8CI, 9CI) (CA INDEX NAME)



RN 256388-15-5 HCAPLUS

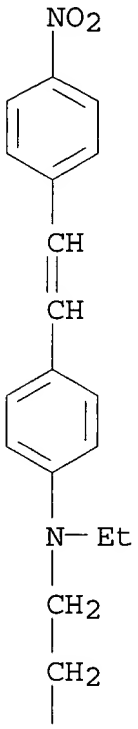
CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-dibutoxy- (9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 73
ST binaphthyl conjugated polyarylenealkenylene **electroluminescence** photoluminescence LED; polybinaphthylvinylene polyphenylenevinylene synthesis optical property
IT Electric current-potential relationship
Electroluminescent devices
Luminescence
Luminescence, **electroluminescence**
(prepn. and **optical** properties of binaphthyl-based conjugated polymer for LEDs)
IT **13185-00-7P 256388-15-5P**
(prepn. and optical properties of binaphthyl-based conjugated polymer for LEDs)

L95 ANSWER 21 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1999:456291 Document No. 131:191798 Novel low-molar-mass glasses for photorefractive and **electroluminescent** applications.
Hohle, C.; Jandke, M.; Schloter, S.; Koch, N.; Resel, R.; Haarer, D.; Strohriegl, P. (Makromolekulare Chemie I and Bayreuther Institut fur Makromolekulforschung (BIMF), Universitat Bayreuth, Bayreuth, D-95440, Germany). Synthetic Metals, 102(1-3), 1535-1536 (English) 1999. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..
AB A no. of org. glass forming starburst mols. have been synthesized and characterized with regard to their thermal and optical properties. Photorefractivity is obsd. and discussed within triphenylamine derivs. substituted with an NLO-**chromophore**. The tuning of glass forming properties in novel phenylquinoxaline glasses and their use as **electron transport** materials for OLEDs is presented.
IT **220288-06-2 220288-08-4**
(novel low-molar-mass glasses for photorefractive and **electroluminescent** applications)
RN 220288-06-2 HCAPLUS
CN Benzenamine, N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-[2-[ethyl[4-[2-(4-nitrophenyl)ethenyl]phenyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



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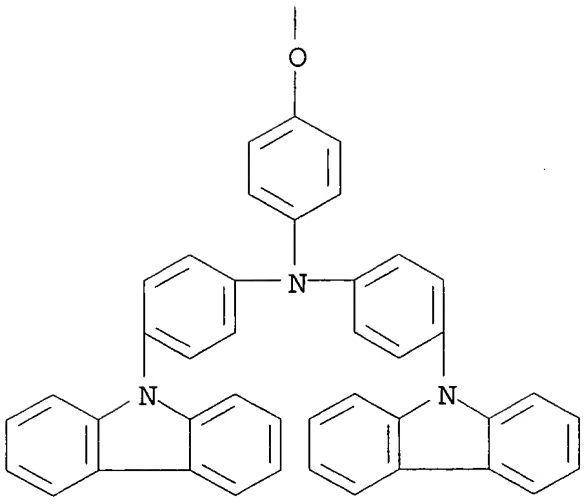
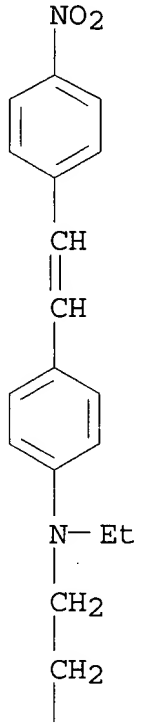


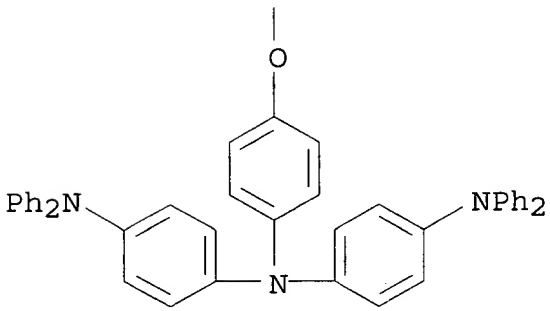
RN 220288-08-4 HCAPLUS

CN 1,4-Benzenediamine, N-[4-(diphenylamino)phenyl]-N-[4-[2-[ethyl[4-[2-(4-nitrophenyl)ethenyl]phenyl]amino]ethoxy]phenyl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

ST photorefractive **electroluminescence** phenylquinoxaline nonlinear **optical** method org glass

IT **Electroluminescent** devices
Optical properties
Photorefractive effect
(novel low-molar-mass glasses for photorefractive and **electroluminescent** applications)

IT Organic glasses
(novel low-molar-mass glasses for photorefractive and **electroluminescent** applications)

IT 198827-73-5 203915-07-5 214132-60-2 **220288-06-2** 220288-07-3 **220288-08-4** 238753-75-8 240126-07-2
(novel low-molar-mass glasses for photorefractive and **electroluminescent** applications)

L95 ANSWER 22 OF 28 HCAPLUS COPYRIGHT 2003 ACS

1999:242016 Document No. 131:80429 Novel functional materials based on triarylamines-synthesis and application in **electroluminescent** devices and photorefractive systems.
Thelakkat, Mukundan; Schmitz, Christoph; Hohle, Christoph; Strohriegl, Peter; Schmidt, Hans-Werner; Hofmann, Uwe; Schloter, Stefan; Haarer, Dietrich (Makromolekulare Chemie I and Bayreuther Institut fur Makromolekulforschung (BIMF), Universitat Bayreuth, Bayreuth, 95440, Germany). Physical Chemistry Chemical Physics, 1(8), 1693-1698 (English) 1999. CODEN: PPCPFQ. ISSN: 1463-9076. Publisher: Royal Society of Chemistry.

AB A variety of new functional materials based on triarylamines, such as low mol. wt. glasses which possess hole conducting/photoconductive properties as well as amorphous bifunctional materials which combine photoconductive and nonlinear optical (NLO) properties in one compd., were synthesized. The new **hole transporting** glasses belong to the class of 1,3,5-tris(triaryldiamino)benzenes (TTADB). The hyperbranched structure and the large aryl groups attached as substituents lead to high glass transition temps. (Tg) of up to 141.degree. in these compds. The TTADBs do not recrystallize upon cooling from the melt, but form stable glasses. Cyclic voltammetry studies reveal multi-oxidn. stages for these compds. of which the 1st oxidn. is reversible. The HOMO energy values detd. from CV for TTADB-1 and TTADB-2 are -4.82 and -4.94 eV, resp. **Light emitting** diodes with the structure ITO/TTADB-2/Alq3/Al (ITO=indium Sn oxide) show high efficiency and large current carrying capacity. Further, bifunctional compds. were synthesized in which a photoconductive moiety such as bis(carbazolyl)triphenylamine or bis(diphenylamino)triphenylamine is covalently bound to different NLO **chromophores**. Some of these compds. are thermally and morphol. stable amorphous materials, possessing Tg at 85-122.degree.. Cyclic voltammetry measurements reveal that the HOMO energy values are between -4.81 and -5.45 eV. In photorefractive measurements using 40 .mu.m thick samples, a diffraction efficiency of 27%, which corresponds to a refractive index modulation (.DELTA.n) of 3.5 .times. 10-3, a max. 2 beam

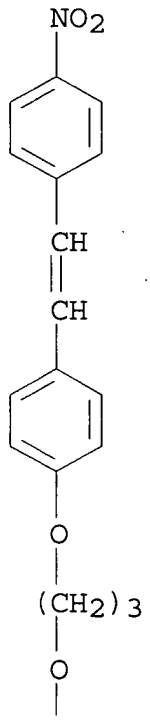
coupling gain coeff. (.GAMMA.) of 90 cm-1 and a response time of 40 ms were obtained.

IT **199297-11-5 228875-52-3 228875-72-7**
(novel functional materials based on triarylamines-synthesis and application in **electroluminescent** devices and photorefractive systems)

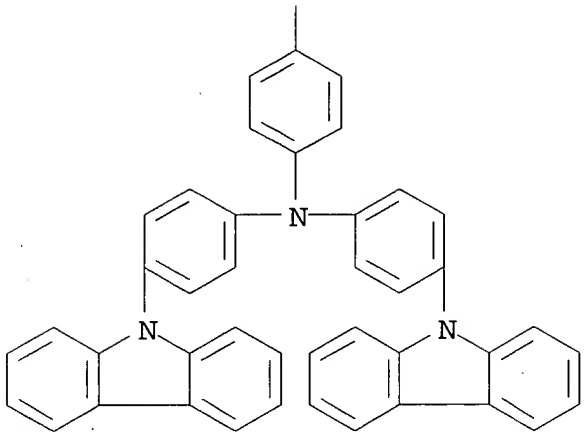
RN 199297-11-5 HCAPLUS

CN Benzenamine, N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-[3-[4-[2-(4-nitrophenyl)ethenyl]phenoxy]propoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A

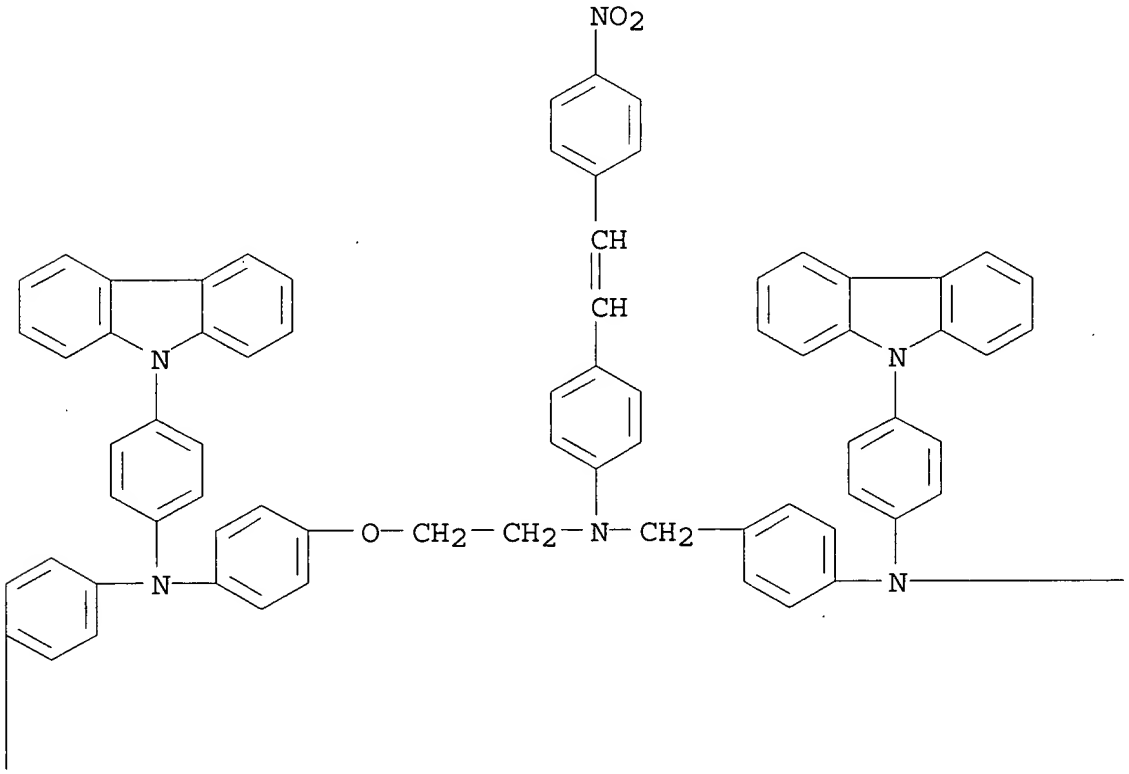


PAGE 2-A

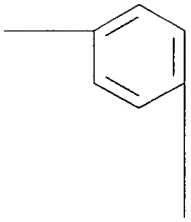


RN 228875-52-3 HCAPLUS
CN Benzenemethanamine, 4-[bis[4-(9H-carbazol-9-yl)phenyl]amino]-N-[2-[4-[bis[4-(9H-carbazol-9-yl)phenyl]amino]phenoxy]ethyl]-N-[4-[2-(4-nitrophenyl)ethenyl]phenyl]- (9CI) (CA INDEX NAME)

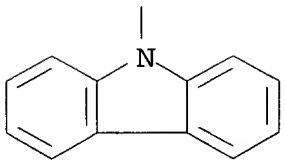
PAGE 1-A



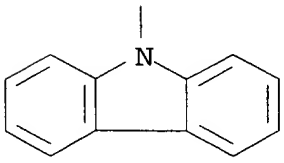
PAGE 1-B



PAGE 2-A



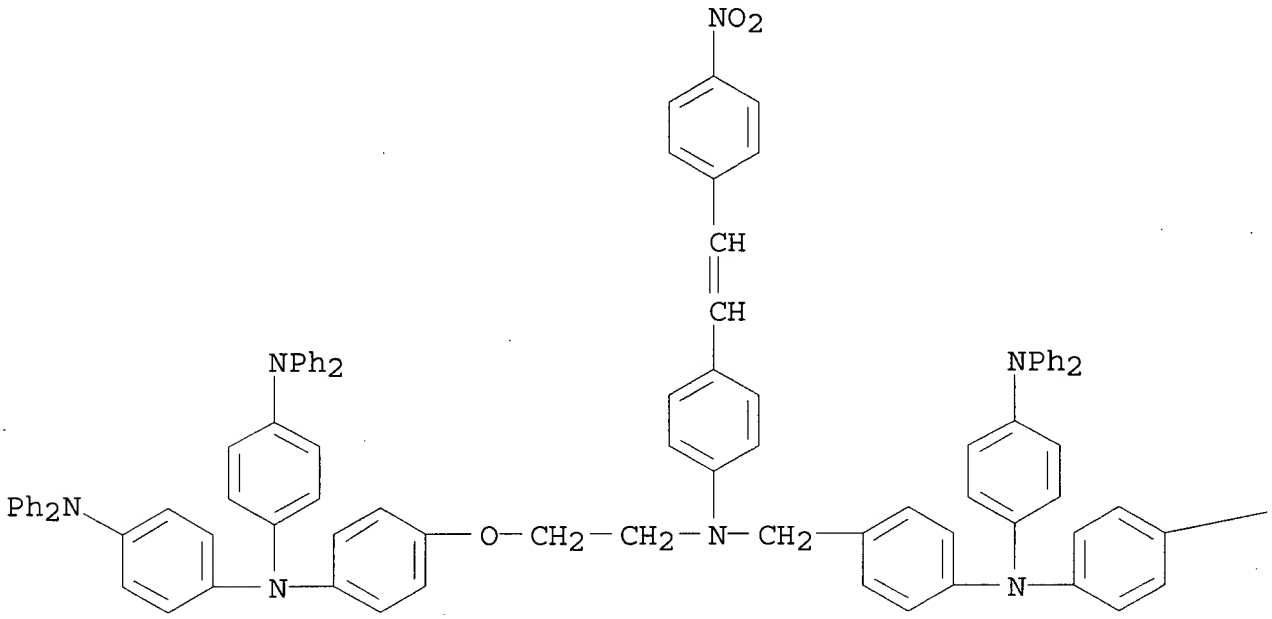
PAGE 2-B



RN 228875-72-7 HCAPLUS
CN 1,4-Benzenediamine, N-[4-[[[2-[4-[bis[4-

(diphenylamino)phenyl]amino]phenoxy]ethyl][4-[2-(4-nitrophenyl)ethenyl]phenyl]amino]methyl]phenyl]-N-[4-(diphenylamino)phenyl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— NPh_2

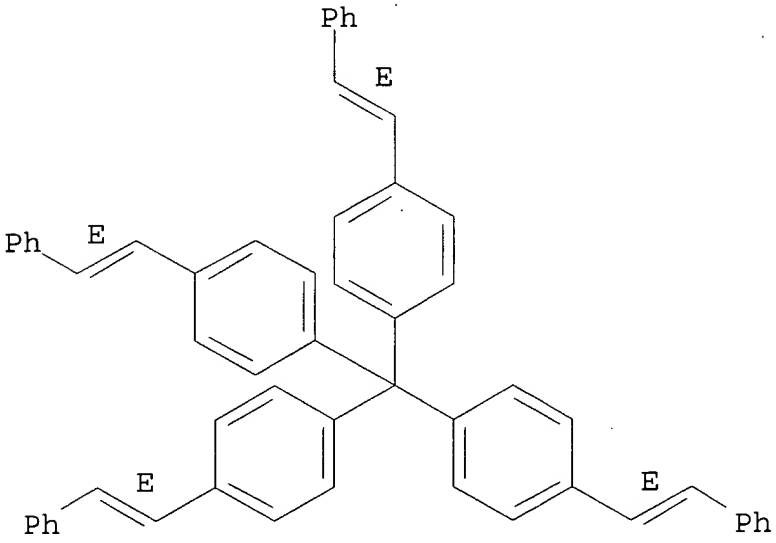
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 76
ST triarylamine deriv nonlinear **optical** **electroluminescent** photorefractive
IT Aryl groups
Chromophores
Cyclic voltammetry
Electroluminescent devices
Glass transition temperature
HOMO (molecular orbital)
Nonlinear optical properties
Oxidation
Photorefractive effect
Refractive index
(novel functional materials based on triarylamines-synthesis and application in **electroluminescent** devices and photorefractive systems)
IT 7429-90-5, Aluminum, uses 50926-11-9, ITO 186965-99-1 **199297-11-5** 199297-12-6 228875-40-9 228875-43-2 228875-47-6 **228875-52-3** 228875-59-0 228875-67-0 **228875-72-7**
(novel functional materials based on triarylamines-synthesis and application in **electroluminescent** devices and photorefractive systems)
IT 2085-33-8, Tris(8-quinolinolato) aluminum
(novel functional materials based on triarylamines-synthesis and application in **electroluminescent** devices and photorefractive systems)

L95 ANSWER 23 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1998:269159 Document No. 128:257191 Synthesis, Spectroscopy, and Morphology of Tetrastilbenoidmethanes. Oldham, Warren J., Jr.; Lachicotte, Rene J.; Bazan, Guillermo C. (Department of Chemistry, University of Rochester, Rochester, NE, 14627, USA). Journal of the American Chemical Society, 120(12), 2987-2988 (English) 1998. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 128:257191. Publisher: American Chemical Society.
AB Heck-coupling reaction of tetrakis(4-iodophenyl)methane (I) with styrene or pentafluorostyrene gives tetrastilbenemethane (II) and tetrakis(pentafluorostilbenyl)methane, resp. Yields in excess of 85% are obtained using phase transfer conditions with a mixt. of Pd(OAc)2, NBu4Br, DMF and K2CO3. Similar reaction of I with 4,4'-tert-butylvinylstilbene provides tetrakis(4-tert-butylstyrylstilbenyl)methane (III) in approx. 17% yield. The low yield is attributed to the low soly. of the intermediate coupled products. II and III show remarkable differences in solid-state properties. II is cryst. and an X-ray diffraction study is reported. In contrast, complex III is amorphous as detd. by calorimetry studies. The ability of joining **chromophores** to a central **tetrahedral** core allows for the design of **electrooptical** materials of intermediate mol. wt. with an amorphous morphol.

IT **205105-80-2P 205105-81-3P 205105-82-4P**
(prepn., spectroscopy, and morphol. of tetrastilbenoidmethanes)
RN 205105-80-2 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-phenylethenyl]- (9CI) (CA INDEX NAME)

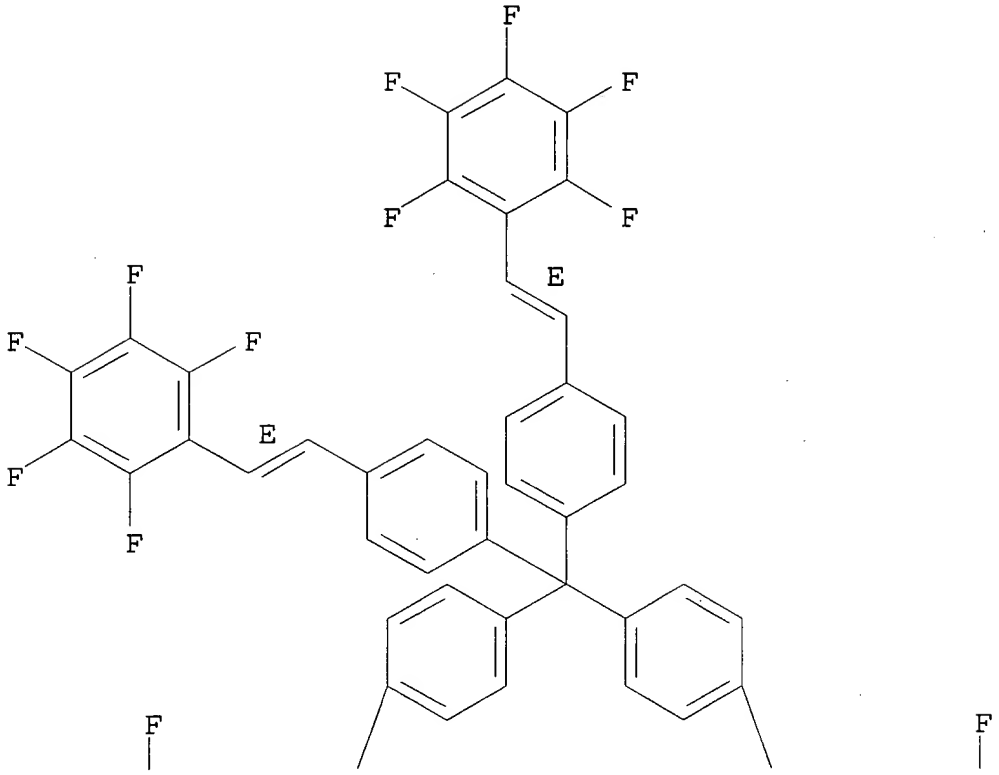
Double bond geometry as shown.



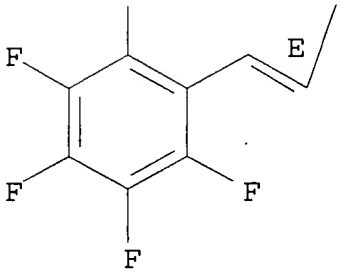
RN 205105-81-3 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[2-(pentafluorophenyl)ethenyl]-, (all-E)- (9CI) (CA INDEX NAME)

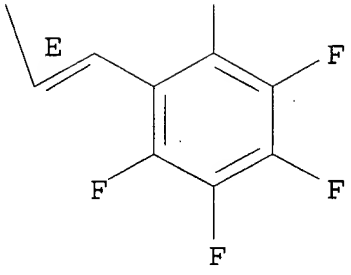
Double bond geometry as shown.

PAGE 1-A



PAGE 2-A

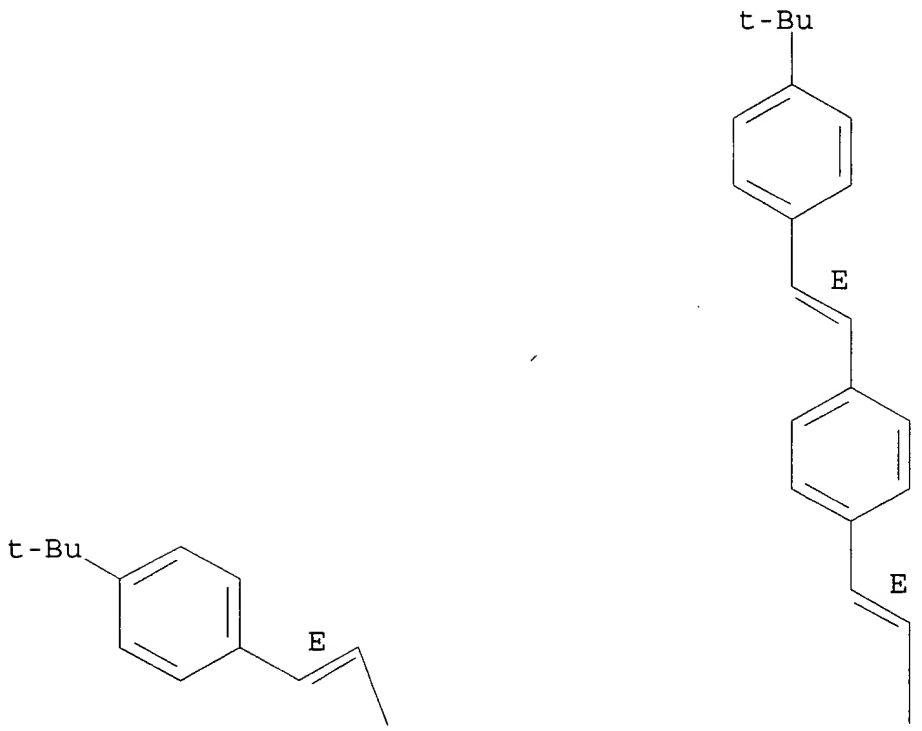




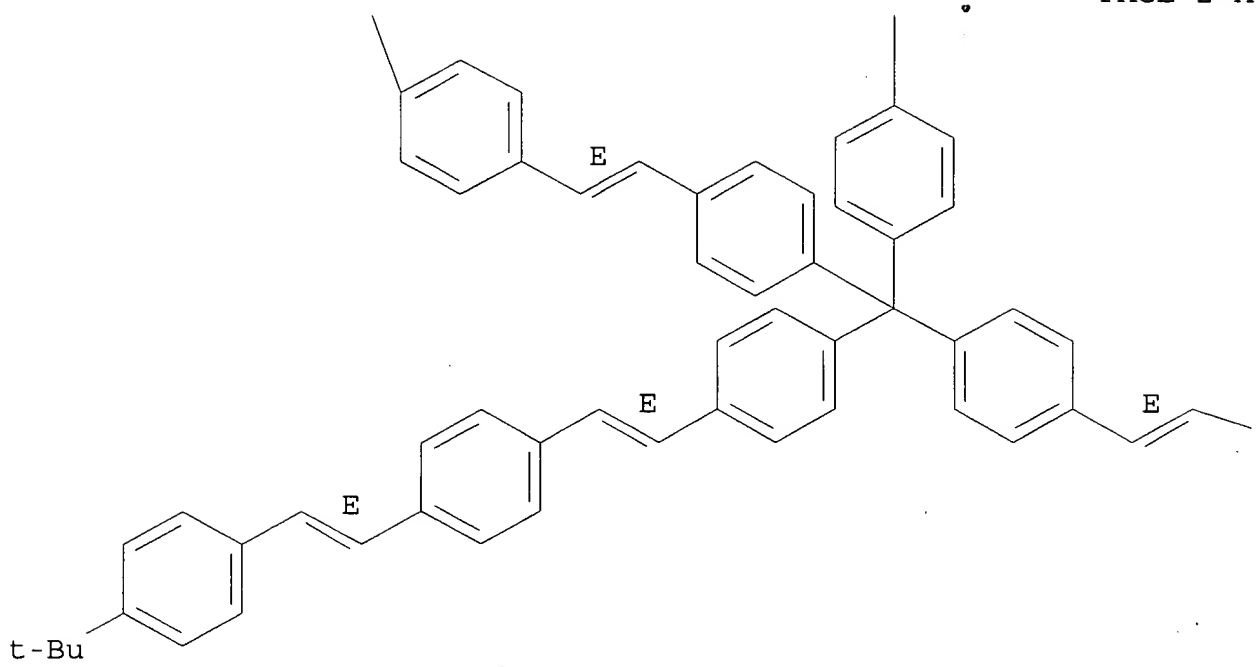
RN 205105-82-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-[(1E)-2-[4-[(1E)-2-[4-(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

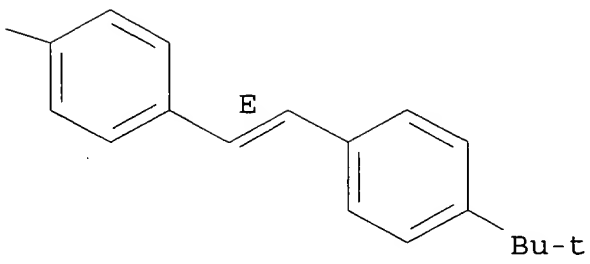
PAGE 1-A



PAGE 2-A

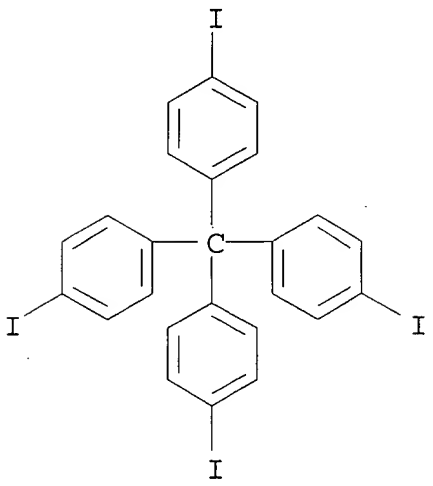


PAGE 2-B



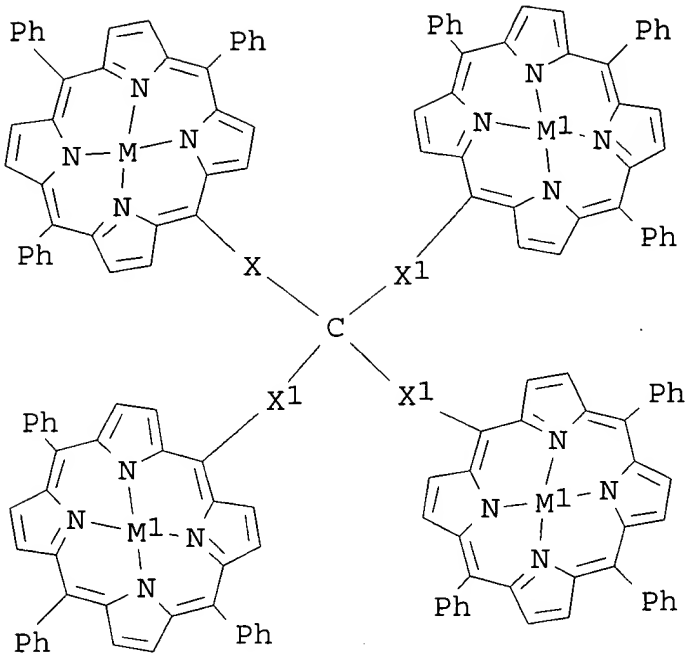
IT **134080-67-4**

(prepn., spectroscopy, and morphol. of tetrastilbenoidmethanes)
RN 134080-67-4 HCAPLUS
CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



CC 25-2 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 73
IT **205105-80-2P 205105-81-3P 205105-82-4P**
(prepn., spectroscopy, and morphol. of tetrastilbenoidmethanes)
IT 100-42-5, reactions 653-34-9 **134080-67-4** 183051-50-5
(prepn., spectroscopy, and morphol. of tetrastilbenoidmethanes)

L95 ANSWER 24 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1997:349371 Document No. 127:65627 Synthesis of nanometer-sized homo- and heteroorganometallic tripodaphyrins. Mongin, Olivier; Gossauer, Albert (Institut fur Organische Chemie der Universitat, Fribourg, CH-1700, Switz.). Tetrahedron, 53(20), 6835-6846 (English) 1997. CODEN: TETRAB. ISSN: 0040-4020. Publisher: Elsevier.
GI



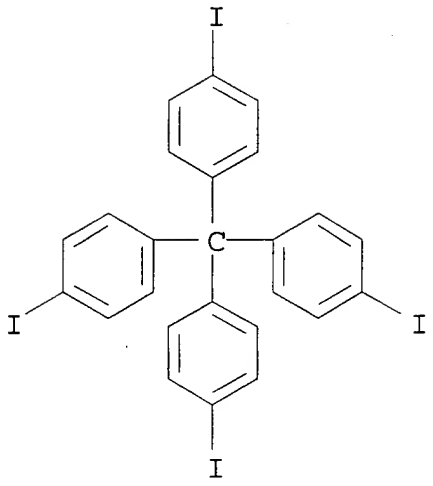
I

AB Tripodaphyrins are **tetrahedral** or pyramidal assemblies in which a porphyrin macrocycle situated on the top of the mol. is "supported" by three "legs" consisting of linear arrays of covalently linked rigid constitutive elements. The edge-length at the "base" of the mols. which have been synthesized until now lies in the range from 3.2 to 6.5 nm. In some tripodaphyrins, e.g. I [X = 4-C6H4C.tplbond.CC6H4-4, X1 = 4-C6H4(C.tplbond.CC6H4-4)3, M = Ni, M1 = Zn, H2; M = Cu, M1 = Zn], the **chromophore** situated on the top of the mol. differs on the complexed metal ion from the other three, which are located at the ends of the "legs". Owing to the dimensions of the mols., no intramol. interaction between the **chromophores** is obsd., even in the presence of a paramagnetic Cu(II) chelate.

IT **134080-67-4**
(synthesis of nanometer-sized homo- and heteroorganometallic tripodaphyrins)

RN 134080-67-4 HCAPLUS

CN Benzene, 1,1',1'',1'''-methanetetrayltetrakis[4-iodo- (9CI) (CA INDEX NAME)



CC 26-7 (Biomolecules and Their Synthetic Analogs)
ST tripodaphyrin heteroorganometallic prepn; porphyrin macrocycle **tetrahedral** pyramidal assembly prepn
IT 115-19-5, 2-Methyl-3-butyn-2-ol 540-37-4, 4-Iodoaniline 589-87-7, 1-Bromo-4-iodobenzene 624-38-4, 1,4-Diiodobenzene 768-60-5, (4-Methoxyphenyl)acetylene 1066-54-2, (Trimethylsilyl)acetylene 133513-05-0, 5-(4-Iodophenyl)-10,15,20-triphenyl-21H,23H-porphyrin **134080-67-4**
(synthesis of nanometer-sized homo- and heteroorganometallic tripodaphyrins)

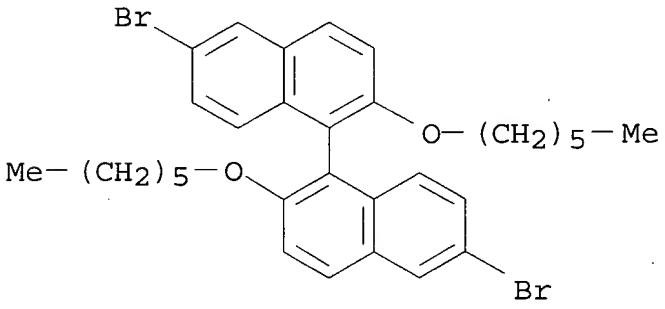
L95 ANSWER 25 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1996:25434 Document No. 124:56879 Conjugated Polymers with Main Chain Chirality. 1. Synthesis of an Optically Active Poly(arylenevinylene). Hu, Qiao-Sheng; Vitharana, Dilrukshi; Liu, Gang-Yu; Jain, Vijay; Wagaman, Michael W.; Zhang, Lei; Lee, T. Randall; Pu, Lin (Departments of Chemistry, North Dakota State University, Fargo, ND, 58105, USA). Macromolecules, 29(3), 1082-4 (English) 1996. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.
AB The first optically active conjugated polymer with main chain chiral configuration, has been synthesized. Palladium-catalyzed Suzuki coupling of an optically active binaphthyl mol., (R)-2,2'-dihexyloxy-1,1'-binaphthyl-6,6'-diboronic acid, with 1,4-bis(p-bromostyryl)benzene (E:Z = 1:1.2), leads to the formation of the chiral polymer (I). Anal. of the polymer by GPC shows M = 20,000 and Mw = 67,000 (PDI = 3.4). The optical rotation of the polymer is [.alpha.]D = -351.degree. (c = 0.38, THF). The UV spectrum of the polymer displays a strong absorption at .lambda.max = 392 nm. A max. emission at 468 nm is obsd. in the fluorescence spectrum of I. The polymer **emits** strong blue **light** under a UV lamp. The racemic 2,2'-dihexyloxy-1,1'-binaphthyl-6,6'-diboronic acid monomer has also been polymd. with 1,4-bis(p-bromostyryl)benzene to give racemic I (Mn = 17,000, Mw =

48,000 and PDI = 2.8). At. force microscopy (AFM) study of spin-coated films reveals that rac- and the optically active (R)-I have different surface morphologies. Neither of these polymer films shows any long-range order. Thermal analyses by TGA and DSC demonstrate that the polymers are stable to more than 200 .degree.C. Thin films of both (R)- and rac-I show conductivities of 4-7 .times. 10-5 scm-1 when doped with an acetonitrile soln. of NOBF4.

IT **172333-48-1P**, (R)-6,6'-Dibromo-1,1'-bi-2-naphthol dihexyl ether
(monomer synthesis; prepn. and properties of an optically active (R)-1,1'-binaphthalene segment-contg. poly(arylenevinylene))

RN 172333-48-1 HCAPLUS

CN 1,1'-Binaphthalene, 6,6'-dibromo-2,2'-bis(hexyloxy)-, (1R)- (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73, 76

IT 65283-60-5P **172333-48-1P**, (R)-6,6'-Dibromo-1,1'-bi-2-naphthol dihexyl ether
(monomer synthesis; prepn. and properties of an optically active (R)-1,1'-binaphthalene segment-contg. poly(arylenevinylene))

L95 ANSWER 26 OF 28 HCAPLUS COPYRIGHT 2003 ACS

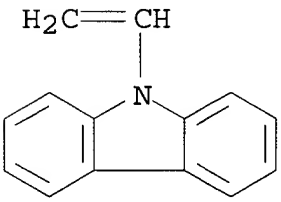
1993:409523 Document No. 119:9523 Buckyball- and quantum dot-doped polymers: a new class of **optoelectronic** materials. Wang, Y.; Herron, N.; Caspar, J. (Cent. Res. Dev., Du Pont Co., Wilmington, DE, 19880-0356, USA). Materials Science & Engineering, B: Solid-State Materials for Advanced Technology, B19(1-2), 61-6 (English) 1993. CODEN: MSBTEK. ISSN: 0921-5107.

AB A review with 17 refs. with emphasis on the photoconductive properties and charge-transfer processes of fullerenes (C60- and C70- and CdS cluster-doped poly(vinylcarbazole)). The mechanism of photocond. and the unique role of fullerene are discussed. Also, the synthesis and crystallog. characteristics of a cluster having an 82-atom **tetrahedral** core of cubic phase CdS with the overall shape of a pyramid are discussed. Polymers doped with this CdS cluster, and other semiconductor nanoclusters, show excellent photocond. and represent a new class of **optoelectronic** materials.

IT **25067-59-8**, Poly(N-vinylcarbazole)
(buckyball- or quantum-dot cadmium sulfide-doped, characterization and use of, as **optoelectronic** materials)
RN 25067-59-8 HCAPLUS
CN 9H-Carbazole, 9-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

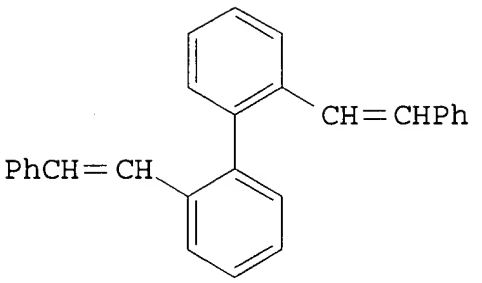
CM 1

CRN 1484-13-5
CMF C14 H11 N

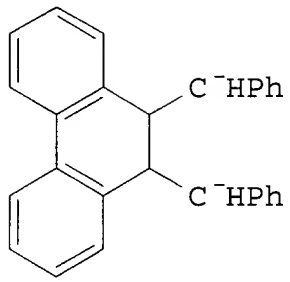


CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 38, 76
ST review fullerene cadmium sulfide doped polyvinylcarbazole; buckyball doped polyvinylcarbazole review; quantum dot doped polyvinylcarbazole review; **optoelectronic** fullerene cadmium doped polymer review
IT Semiconductor devices
(**optoelectronic**, buckyball- or quantum-dot cadmium sulfide-doped poly(vinylcarbazole) as)
IT **25067-59-8**, Poly(N-vinylcarbazole)
(buckyball- or quantum-dot cadmium sulfide-doped, characterization and use of, as **optoelectronic** materials)
IT 99685-96-8, Buckyball 115383-22-7, Fullerene-C70
(poly(vinylcarbazole) doped with, characterization and use of, as **optoelectronic** materials)
IT 1306-23-6, Cadmium sulfide, uses
(quantum dot, poly(vinylcarbazole) doped with, characterization and use of, as **optoelectronic** materials)

L95 ANSWER 27 OF 28 HCAPLUS COPYRIGHT 2003 ACS
1992:40686 Document No. 116:40686 **Electron-transfer** -induced valence isomerization of 2,2'-distyrylbiphenyl. Boehm, Arno; Meerholz, Klaus; Heinze, Juergen; Muellen, Klaus (Max-Planck-Inst. Polymerforsch., Mainz, D-6500, Germany). Journal of the American Chemical Society, 114(2), 688-99 (English) 1992. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 116:40686.
GI



I



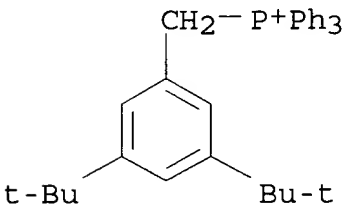
II

AB Upon chem. or electrochem. redn., distytylbiphenyl trans,trans-I rearranges into the bis-benzylic dianion trans-II, which can be either protonated to a 9,10-dibenzyl-9,10-dihydrophenanthrene or oxidatively coupled to a cyclobutane species. The mechanism of the **electron-transfer** induced skeletal rearrangement is studied by product anal. and by cyclic voltammetry, and the results are compared with the outcome of the photolytic [2 + 2] cycloaddn.

IT **36393-44-9**
(Wittig reaction of, in synthesis of bis(ditertbutylstyryl)biphenyl)

RN 36393-44-9 HCAPLUS

CN Phosphonium, [[3,5-bis(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)



● Br⁻

CC 22-6 (Physical Organic Chemistry)

ST **electron transfer** valence isomerization distyrylbiphenyl; biphenyl distyryl **electron transfer** isomerization; phenanthrene dibenzyldihydro; oxidative coupling bisbenzylic dianion; electrochem redn valence isomerization distyrylbiphenyl stereochem

IT Steric hindrance
(effect of, on **electron-transfer**-induced valence isomerization of distyrylbiphenyl tertbutyl deriv.)

IT Ion pairs

(intermediacy of, in **electron-transfer** -induced valence isomerization of distyryl biphenyl)

IT Kinetics of protonation
Oxidation
Protonation and Proton transfer reaction
(of bis-benzylic dianion intermediate **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

IT Conformation and Conformers
(of bis-benzylic dianion intermediate in **electron-transfer**-induced valence isomerization of distyrylbiphenyl derivs.)

IT Inductive effect
(on **electron-transfer**-induced valence isomerization of distyrylbiphenyl tertbutyl deriv.)

IT Isomerization
(valence, stereoselective, **electron-transfer** -induced, of distyrylbiphenyl derivs., mechanism of)

IT 1210-05-5, [1,1'-Biphenyl]-2,2'-dicarboxaldehyde **36393-44-9**
(Wittig reaction of, in synthesis of bis(ditertbutylstyryl)biphenyl)

IT 137571-29-0
(electrochem. formation and intermediacy of, in **electron -transfer**-induced valence isomerization of distyrylbiphenyl deriv.)

IT 137571-28-9P
(formation and conformation of, as intermediate in **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

IT 10108-64-2, Cadmium dichloride
(oxidative quenching reaction of, in **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

IT 7553-56-2, Iodine, reactions
(oxidative quenching with, in **electron-transfer** -induced valence isomerization of distyrylbiphenyl)

IT 137571-19-8P
(prepn. and **electron-transfer**-induced valence isomerization of, via chem. and electrochem. redn.)

IT 67-56-1, Methanol, reactions
(protonating quenching reaction of, in **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

IT 12408-02-5
(protonation and Proton transfer reaction, of bis-benzylic dianion intermediate **electron-transfer** -induced valence isomerization of distyrylbiphenyl)

IT 109-64-8, 1,3-Dibromopropane
(quenching reaction of, in **electron-transfer** -induced valence isomerization of distyrylbiphenyl)

IT 120-12-7, Anthracene, reactions
(reaction of, and use of, as reductive mediator in

electron-transfer-induced valence isomerization of distyrylbiphenyl)

IT 7439-93-2, Lithium, reactions 7440-09-7, Potassium, reactions
(redn. with, in **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

IT 33510-35-9
(stereoselective **electron-transfer**-induced valence isomerization of, via chem. and electrochem. redn.)

IT 588-59-0, Stilbene
(use of, as reductive mediator for **electron-transfer**-induced valence isomerization of distyrylbiphenyl)

L95 ANSWER 28 OF 28 HCAPLUS COPYRIGHT 2003 ACS

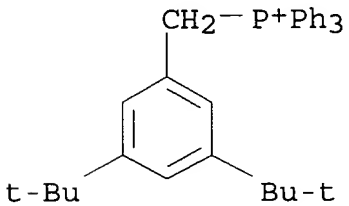
1991:206639 Document No. 114:206639 Novel oligo(phenylenevinylenes): models for the charging of extended .pi. chains. Schenk, Rainer; Gregorius, Heike; Meerholz, Klaus; Heinze, Juergen; Muellen, Klaus (Max-Planck-Inst. Polymerforsch., Mainz, D-6500/1, Germany). Journal of the American Chemical Society, 113(7), 2634-47 (English) 1991. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 114:206639.

AB The syntheses as well as the chem. and electrochem. redn. of a series of novel oligo(phenylenevinylenes) are described. The extended .pi. chains are built up by sequences of Wittig reactions, and the corresponding polyanions are generated by **electron-transfer** reactions and characterized by NMR spectroscopy and quenching expts. The charge-storage capacity, the charge distribution, and the stereodynamic behavior of the anions are examd. as a function of the chain length, the linkage of the stilbene subunits, and the presence of Ph substituents. The redn. of the title compds. serves as a suitable model expt. for the doping of the corresponding poly(phenylenevinylenes).

IT **36393-44-9**
(Wittig reaction of, with methylbenzaldehyde)

RN 36393-44-9 HCAPLUS

CN Phosphonium, [[3,5-bis(1,1-dimethylethyl)phenyl]methyl]triphenyl-, bromide (9CI) (CA INDEX NAME)



Br⁻

CC 25-2 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 72
IT **36393-44-9**
(Wittig reaction of, with methylbenzaldehyde)

(more from the authors)
=> d 198 1-3 cbib abs hitstr ind

L98 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS
2003:221276 Design, synthesis, and characterization of well-defined amorphous molecules for use in organic LEDs. **Robinson, Matthew R.**; **Bazan, Guillermo C.**; Heeger, Allan J.; O'Regan, Marie B.; **Wang, Shujun** (Department of Materials Engineering, University of California, Santa Barbara, CA, 93106, USA). ACS Symposium Series, 844(Molecules as Components of Electronic Devises), 187-194 (English) 2003. CODEN: ACSMC8. ISSN: 0097-6156. Publisher: American Chemical Society.
AB Two strategies are presented for making amorphous org. chromophores with well-defined dimensions that exploit the superior qualities of polymers and small mols. with respect to LED fabrication. These qualities are resistance to crystn., purity, high luminescence efficiency, and high soly. required for spin casting. Tetrakis(4-(4'-(3'',5''-dihexyloxystyryl)styryl)stilbenyl)methane (T-4R-OC6H13) exemplifies a strategy consisting of four oligophenylenevinylene fragments ("arms") connected to a tetrahedral point of convergence. Bulk samples are amorphous and the film-forming qualities are useful for the fabrication of LEDs with low turn-on voltages. In a related strategy, tris[1-(N-ethylcarbazolyl)-1-(3',5''-hexyloxybenzoyl) methane]-(phenanthroline) europium was designed using a modular approach. It incorporates functionalities for electron and hole transport, soly., and resistance to crystn. LEDs were fabricated and studied.
CC 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

L98 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS
2002:245211 Document No. 137:208729 Structural phase transformation in tetrakis(4,4'-(2,2-diphenylvinyl)-1,1'-biphenyl)methane. Yang, C. Y.; **Wang, Shujun**; **Robinson, Matthew R.**; **Bazan, Guillermo C.**; Heeger, A. J. (Institute of Polymers and Organic Solids - Materials Research Lab., University of California, Santa Barbara, CA, 93106, USA). Materials Chemistry and Physics, 76(1), 64-68 (English) 2002. CODEN: MCHPDR. ISSN: 0254-0584. Publisher: Elsevier Science B.V..
AB An irreversible structural phase transformation is obsd. in tetrakis(4,4'-(2,2-diphenylvinyl)-1,1'-biphenyl)methane, C(DPVBi)4, upon increasing the temp. The PI phase of the as-synthesized material is cryst. with tiny (typically 10-20 nm) crystallites. The PI phase has hexagonal symmetry (space group P.hivin.6) with a 2.068 and c 2.194 nm. When PI is annealed above its m.p. (Tm = 260.degree.), the structure transforms irreversibly into a different hexagonal phase, PII, (space group P6/m) with a 2.102, c 3.370 nm.

The PII phase melts at around Tm = 278.degree.. When heated >278.degree., C(DPVBi)4 becomes amorphous with random mol. packing. The amorphous phase has a glass transition temp., Tg, around 138.degree.. The PI phase transforms directly into the amorphous phase if the sample is continuously heated above the m.p. (Tm = 278.degree.) of PII.

CC 75-7 (Crystallography and Liquid Crystals)
ST structural phase diphenylvinylbiphenyl methane
IT Structural phase transition
(in tetrakis[(diphenylvinyl)biphenyl]methane crystals)
IT Glass transition temperature
(of tetrakis[(diphenylvinyl)biphenyl]methane amorphous phase)
IT Thermal stability
(of tetrakis[(diphenylvinyl)biphenyl]methane crystals)
IT Crystal structure
Melting point
(of tetrakis[(diphenylvinyl)biphenyl]methane polymorphs)
IT 288105-05-5, Tetrakis(4,4'-(2,2-diphenylvinyl)-1,1'-biphenyl)methane
(structural phase transformation in)

L98 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS
2001:200784 Glass-forming binaphthyl chromophores. Ostrowski, Jacek C.; Hudack, Raymond A., Jr.; **Robinson, Matthew R.**; **Wang, Shujun**; **Bazan, Guillermo C.** (Department of Chemistry and Biochemistry, University of California Santa Barbara, Santa Barbara, CA, 93106, USA). Abstracts of Papers - American Chemical Society, 221st, IEC-121 (English) 2001. CODEN: ACSRAL. ISSN: 0065-7727. Publisher: American Chemical Society.

AB The use of the binaphthol framework to synthesize glass-forming org. chromophores is described. DSC measurements and powder diffraction expts. show that the binaphthyl chromophores show a resistance to crystn. In some cases, considerably different thermal behavior is obsd. between enantiomerically enriched samples and their racemic counterparts. Increasing the size of the conjugated fragment on the binaphthyl core leads to materials with higher glass transition temps. and a less pronounced tendency to crystallize. Fluorescence spectroscopy gives evidence of "excimer" type interactions in the solid state, except for the chromophores contg. 4-(2,2'-diphenylvinyl)-1-Ph groups. Amorphous films of these chromophores can be spun directly from soln. and used to fabricate light emitting diodes in which the electroluminescent layer corresponds to the binaphthyl chromophore.

[redacted]